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ABSTRACT

This publication presents national data on trends and participation in continuing higher education. Section 1, "An Expanding Demand for Lifelong Learning," discusses how the supply of new entrants will be insufficient for future labor needs; more women are participating in the workforce; and more high school graduates plan to enroll in college. Section 2, "Responding to Diverse Learner Needs," explains how more Americans are earning college degrees; more employers are creating corporate universities; and baby boomers are likely to continue working longer. Section 3, "Paying for Lifelong Learning," notes that tuitions are climbing; loans far surpass grants in student aid; and most undergraduate students work while in college. Section 4, "Adapting to the Digital Age," explains that Internet technology has spread at a remarkable rate; more institutions are offering online education; and students are using the Internet increasingly for research. Section 5, "Shaping Higher Education for a Global Economy," describes how the global economy is becoming more integrated; most American undergraduates studying abroad do so in Europe; and the United States has the largest online population. Section 6, "Promoting Civil Society and the Arts," explains that attendance at arts events is on the rise; more charter schools are being created; and museums are going online. (SM)

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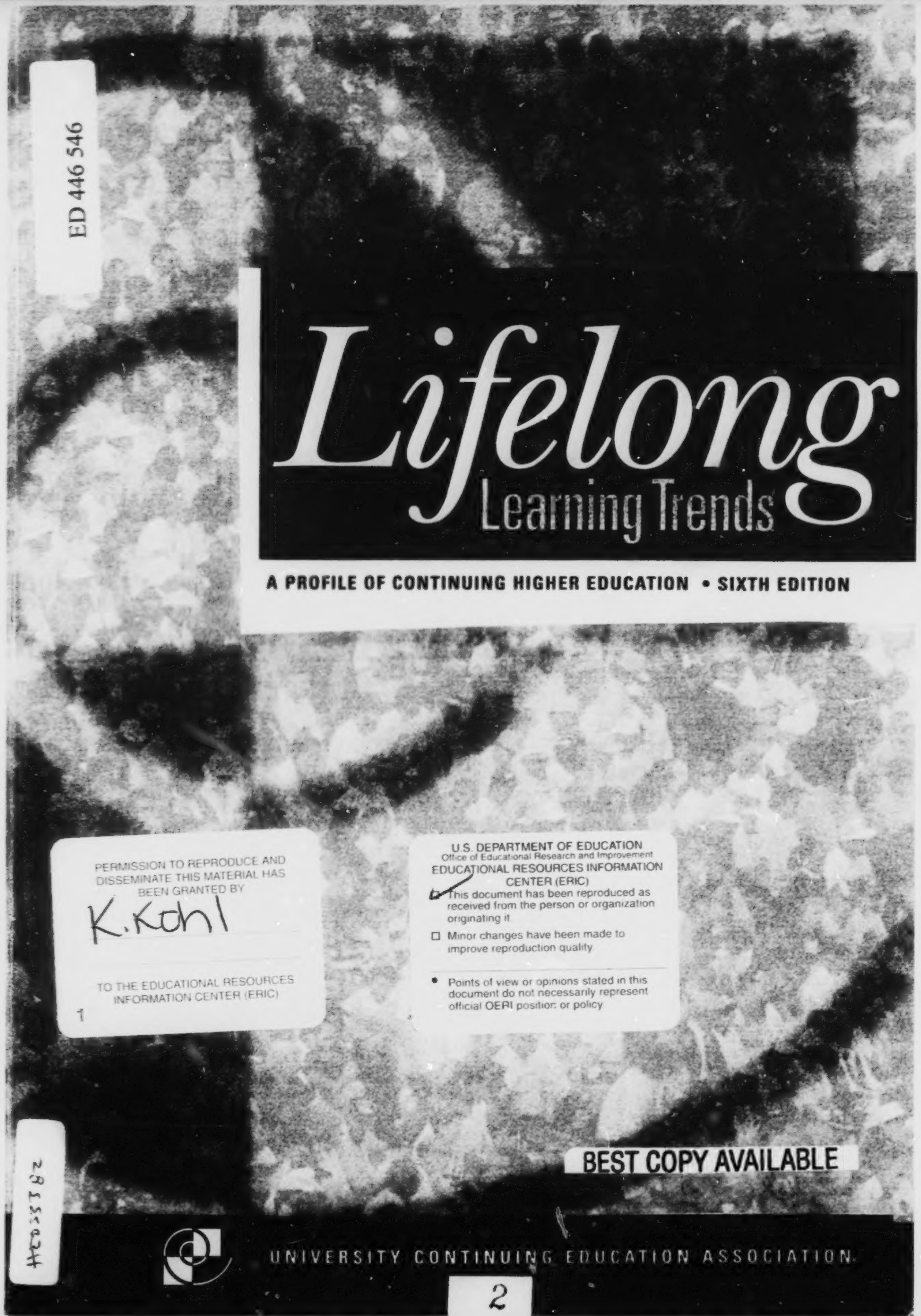

Lifelong Learning Trends

A PROFILE OF CONTINUING HIGHER EDUCATION • SIXTH EDITION

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Lifelong
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A PROFILE OF CONTINUING HIGHER EDUCATION • SIXTH EDITION

UNIVERSITY CONTINUING EDUCATION ASSOCIATION

UCEA

Founded in 1915, the University Continuing Education Association promotes expanded opportunities and high-quality continuing higher education. Association members include accredited, degree-granting higher education institutions and comparable nonprofit organizations dedicated to postsecondary continuing higher education. The Association collects and analyzes data to support its public policy activities and to assist its member institutions' planning efforts. The Association conducts three national surveys each year. In addition, UCEA uses secondary data collected by public and private agencies to produce statistical analyses of relevance to the continuing higher education field.

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UCEA seeks to exemplify its commitment to ethnic, cultural and gender diversity and fairness in all of its forums, both public and private.

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Foreword

Lifelong Learning Trends represents an effort to gather in a single publication national data on trends and participation in continuing higher education. The charts contained in this publication have been derived from data collected by UCEA, as well as by governmental and private organizations. This is the sixth edition of *Trends*, a book originally published by the Association in 1990.

Several of the charts contained in this publication are based on UCEA surveys or have been adapted from **in***focus*, the Association's monthly newsletter. Information has been revised and supplemented whenever possible with the most current information available.

Peter Gwynn, UCEA's director of governmental relations and programs, developed the contents of this publication and served as its editor.

Kay J. Kohl

Executive Director

April 2000

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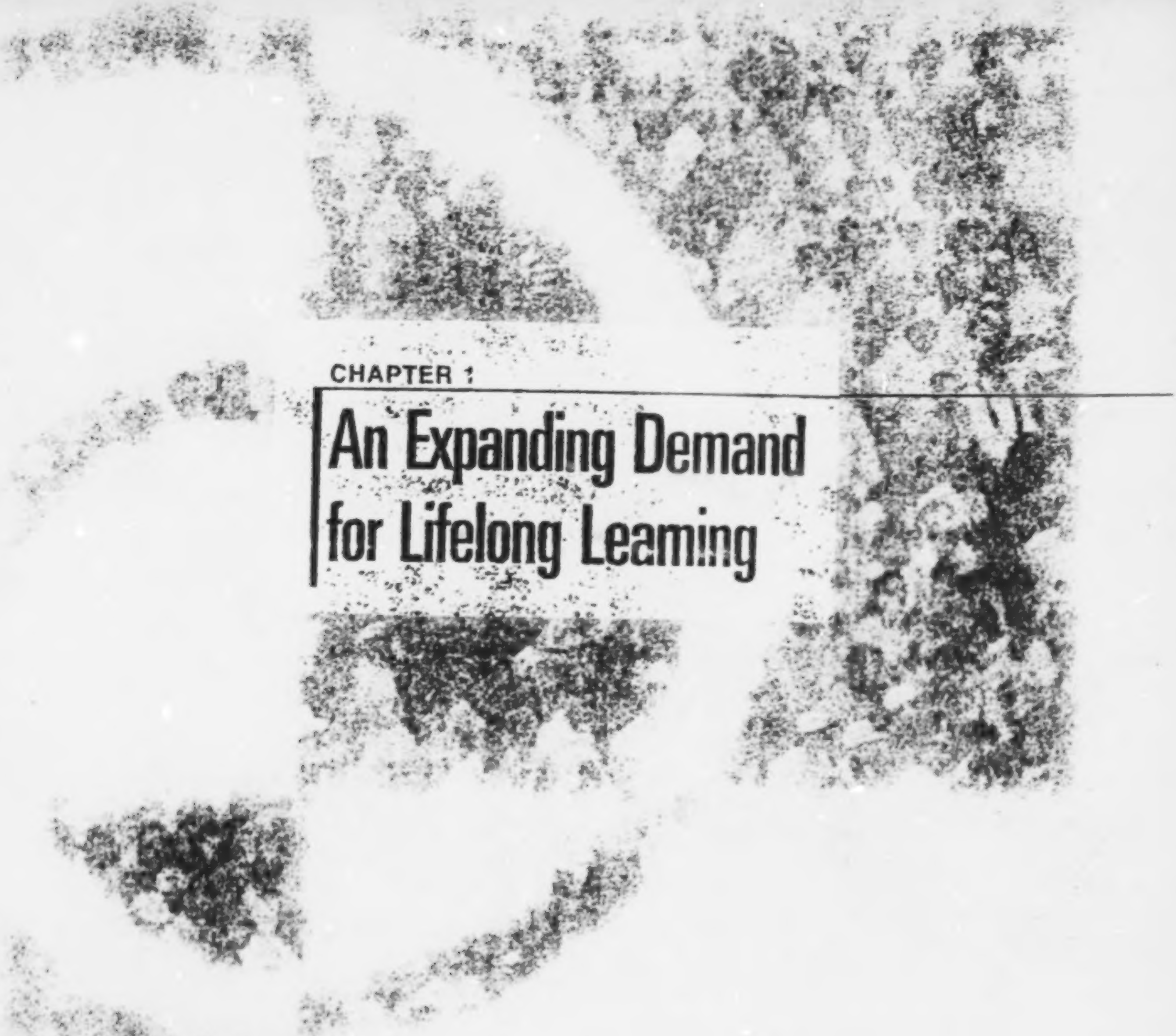


CHAPTER 1

An Expanding Demand for Lifelong Learning

Composition of the U.S. civilian labor force will change dramatically by the year 2008

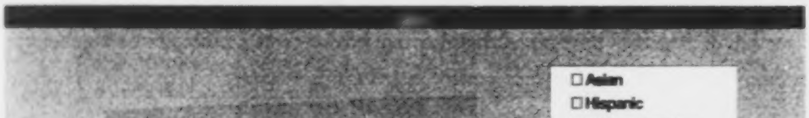
Demographic shifts occurring in the civilian population will change the composition and age-distribution of the labor force dramatically by the year 2008. These shifts result from varying birth rates in population groups, changing immigration patterns, longer career spans and increasing numbers of women entering the workforce.

In 1996, white, non-Hispanics accounted for 75 percent of the U.S. civilian labor force. In the same year, African Americans accounted for 11 percent of the labor force; Hispanics, 10 percent; and Asians, 4 percent.

By the year 2008, however, demographic shifts will reshape the American labor force. Minorities will capture a larger share of the jobs, while the percentage of white, non-Hispanic workers will fall to 70 percent of the total.

By the year 2008, the number of Hispanic workers will surpass the number of African American workers, while Asian workers will constitute 5 percent of the labor force.

Women will account for 50 percent of the new entrants into the labor force by 2008.



Source: U.S. Bureau of Labor Statistics *Monthly Labor Review*, November 1999.

Composition of the U.S. Labor Force, 1988, 1998, and projected to 2008

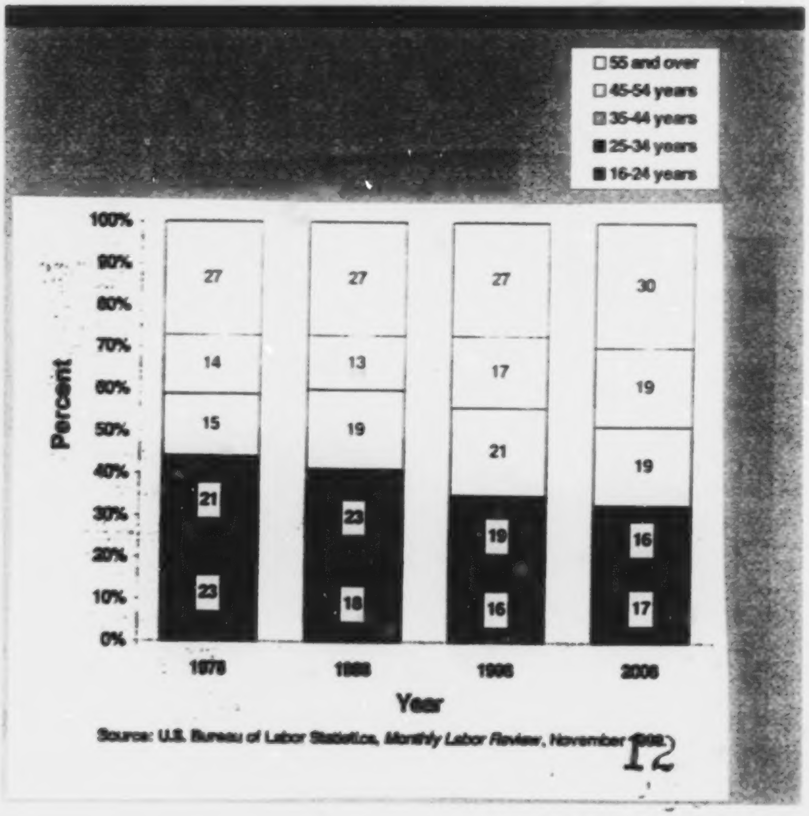
The supply of new entrants will be insufficient for the economy's labor needs

In 1976, workers 16-34 years old comprised half of the U.S. civilian labor force. By 2008, however, this age cohort will be eclipsed by the 35-64 age cohort, which will account for 63 percent of the labor force.

With labor force growth slowing between now and the year 2008, those already in the labor force will bear the brunt of adapting to the needs of a highly competitive global economy characterized by rapid technological change.

An older labor force will require new investments. Many employers now consider employee education an essential cost of doing business in a competitive economy. Also, many adults understand that continuous learning is essential to their employment future.

With the changing nature of the American economy, knowledge is becoming more important. Developing human resources is the key to remaining globally competitive, which implies the acquisition of new knowledge and skills.



Source: U.S. Bureau of Labor Statistics, *Monthly Labor Review*, November [illegible]

Percent of the U.S. Population by Age Cohorts: 1978, 1988, 1998, and projected to 2008

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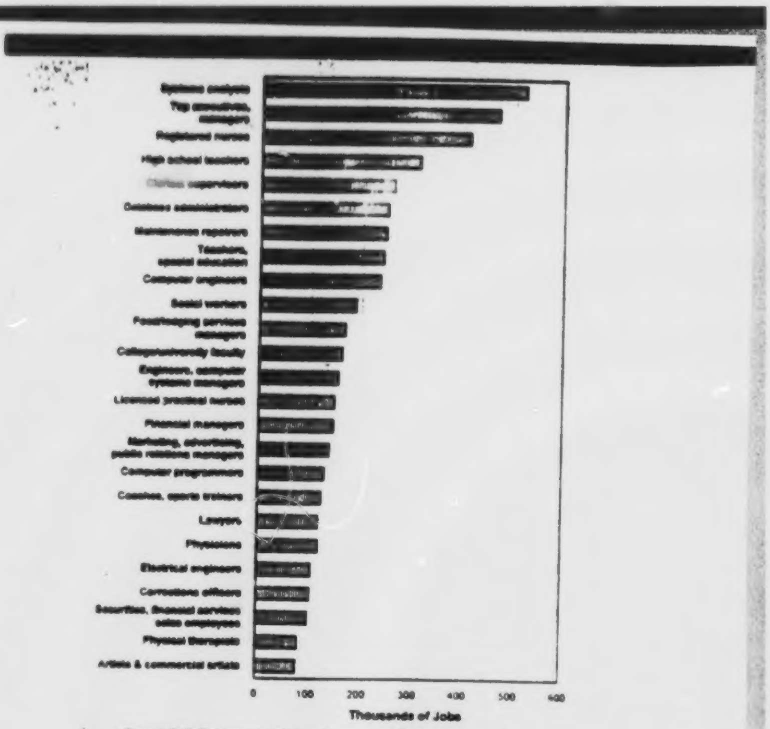
Occupations requiring more education have the fastest job growth

It is estimated that three out of four jobs require some postsecondary education. Of the new jobs being created by the year 2006, managerial, professional and technical occupations will be among the fastest growing job categories, accounting for 29 percent of new job openings. These three occupational groups also have the highest proportion of workers with a college degree. These three groups also earn, on average, much higher salaries than do virtually all other occupational categories.

Those people already in the workforce, as well as new entrants, will need higher levels of education and training in order to compete effectively. Of the 20 fastest growing occupations requiring at least a college degree, more than half will be in health fields or computer industries.

Occupations with Fast Growth, High Pay and Low Unemployment that Have the Largest Numerical Growth, Projected to 1996-2006



Source: BLS, Department of Labor, *Occupational Outlook Handbook*, 1998

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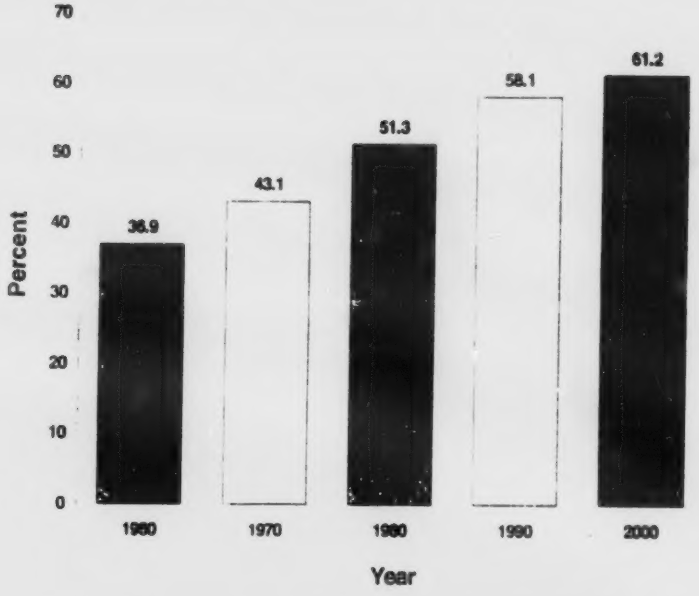
More women are participating in the workforce

Since World War II, women have been steadily entering the U.S. workforce. All segments of the female population, regardless of marital status, race, education or presence of children, have dramatically increased their rates of participation. Since 1970, workforce participation of women is up over 40 percent. The reasons for this dramatic change have as much to do with economic necessity as with the social and political advances of women in recent decades.

Women continue to be at an economic disadvantage in the workforce. Typically, women earn less than men and bear a larger share of family childcare responsibilities.

Women head 81 percent of single-parent households with children under age 18, and participate in the workforce at higher than average rates. In 1998, two-thirds of women with children under the age of six were participating in the U.S. workforce.



Workforce Participation Rate of Women Age 20 and Over, 1960-2000

Source: U.S. Bureau of Labor Statistics, Current Population Surveys, various years.

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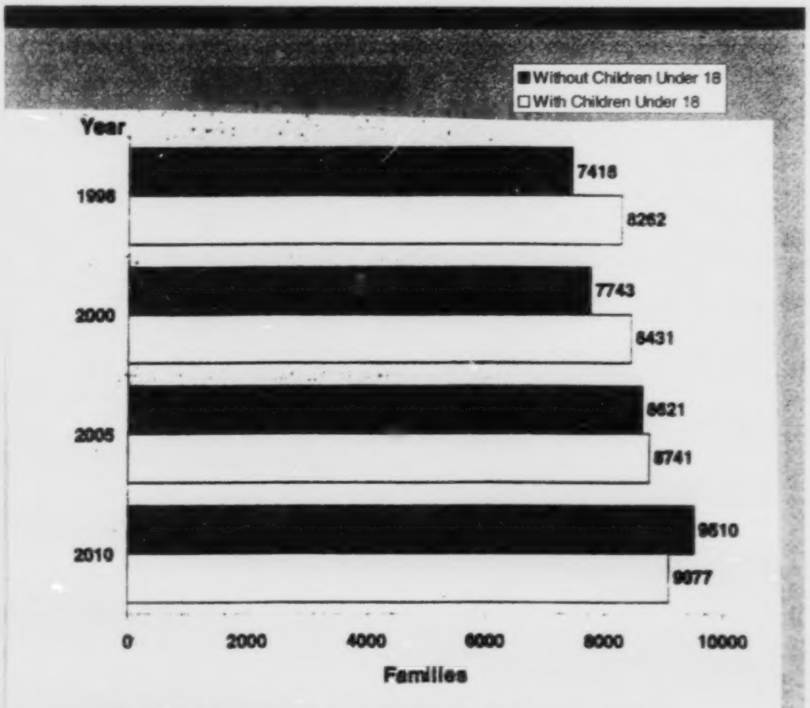
Single parents head more American households

The profile of the American family has changed substantially since 1970. The nuclear family household is no longer the norm as the incidence of single-parent and non-family households becomes more common. The Census Bureau estimates that single-parent families account for 32 percent of all families with children under 18 years of age and that 80 percent of these are headed by women.

Single-parent families are at an inherent disadvantage. They often bear the sole responsibility for supporting the family financially as well as raising one or more children. And it is often the case that single parents lack the education and skills necessary to qualify for a job that pays enough to allow them to successfully balance these responsibilities.

The real value of the minimum wage declined by an average of 1 percent each year between 1970 and 2000.

Affordable childcare and flexible part-time study options are increasingly important if low income working mothers and fathers are to gain the skills needed for a better paying job.



Source: U.S. Bureau of the Census, *Current Population Reports*, P25-1129.

Family Households Headed by Single Persons by Presence of Children Under 18, 1998 to 2010 Projected

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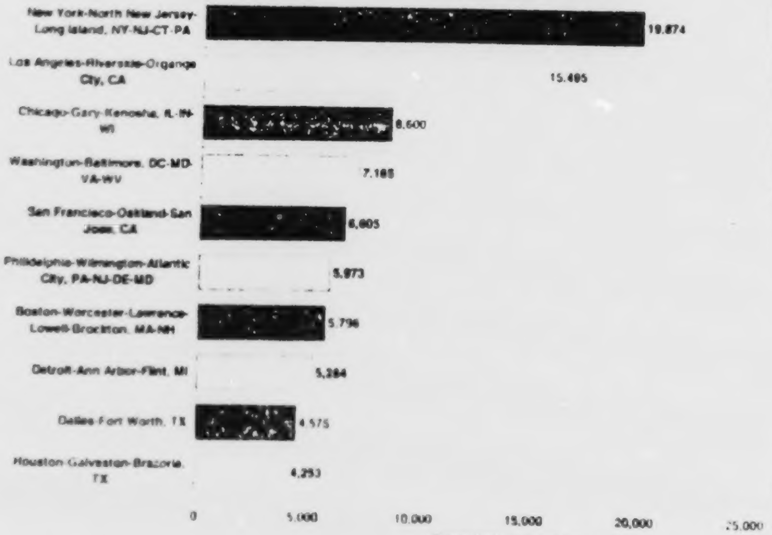
Most Americans live in urban areas

Nearly 80 percent of Americans live in urban areas. This figure has been steadily increasing for decades. In 1970, there were 153 incorporated places with 100,000 or more residents. By 1996, that number had increased 43 percent to 219.

In 1996, 32 percent of the U.S. population resided in the 10 largest metropolitan areas and 42 percent lived in the 20 largest metropolitan areas.

Large urban centers also have a disproportionate share of the nation's minority, immigrant and poor populations. Thus, education and training offered by colleges and universities can make contributions to regional economic and social development.

Increased traffic congestion and the spread of suburban office parks have accompanied the growth of metropolitan areas, making convenient access to higher education a priority. Colleges and universities have responded by developing off-campus learning centers for working men and women, programs for employees at the work site, and technology-mediated instruction. For non-traditional students who commute to work or live at some distance from a campus, access to convenient learning centers is a priority consideration.



Source: U.S. Bureau of the Census. State and Metropolitan Area Data Book, 1997-98, 1998.

Population of the 10 Largest U.S. Metropolitan Areas, 1996

Continuing education responds to a growing demand for bilingual teachers

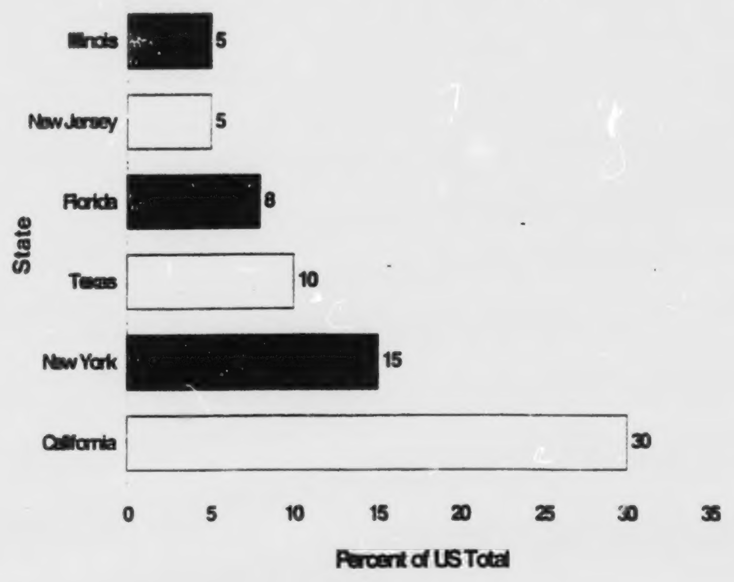
Recent immigration is pushing national demand for bilingual teachers in the United States to a record high, particularly at the elementary and secondary levels in Spanish and Asian languages. In some school districts, teachers may have limited English student populations that speak as many as 50 different languages and dialects among them.

Six states have received 70 percent of immigrants to the United States from 1990 to 1998. They are: California, Florida, Illinois, New Jersey, New York and Texas.

Bilingual and dual language education programs require teachers to have a command both of English and the student's primary language. Limited-English proficient students have performed poorly in schools without bilingual education and are under-represented in postsecondary education. Bilingual education is intended to raise the academic performance of these students.

College and university continuing education units are important providers of programs that prepare bilingual and English-as-a-second-language teachers.

U.S. States Receiving the Largest Shares of Immigrants, 1990-98



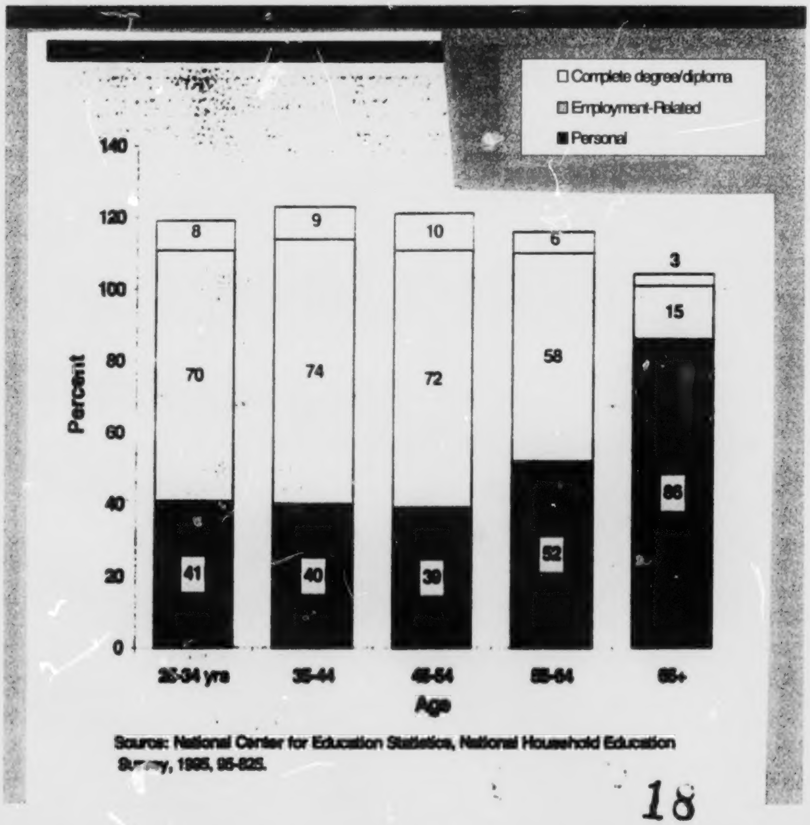
Source: U.S. Bureau of the Census, Immigration and Naturalization Service, 1999.

Most adults take continuing education for work-related reasons

During the course of a year, some 46 percent of Americans ages 16 and older will take part in some kind of continuing learning. Such activities vary widely and may include remedial education, college level courses, job skills training, or personal enrichment.

The percentage of adults pursuing continuing education of some kind grew 55 percent between 1991 and 1998. Most adults focus on one type of continuing education, with work-related continuing education attracting the most people.

Overall, 90 million adults age 16 and older participated in some form of continuing education during 1998-99. Sixty-two percent of those surveyed with a bachelor's degree or higher participated in some form of continuing education, as opposed to 37 percent of those with a high school diploma. Given that the number of Americans aged 25 years and older with a college degree has climbed to 41 million, it can be anticipated that the demand for continuing education will continue to increase.



Source: National Center for Education Statistics, National Household Education Survey, 1995, 95-825.

Adults Aged 16 and Over Participating in Continuing Education by Reason, 1995

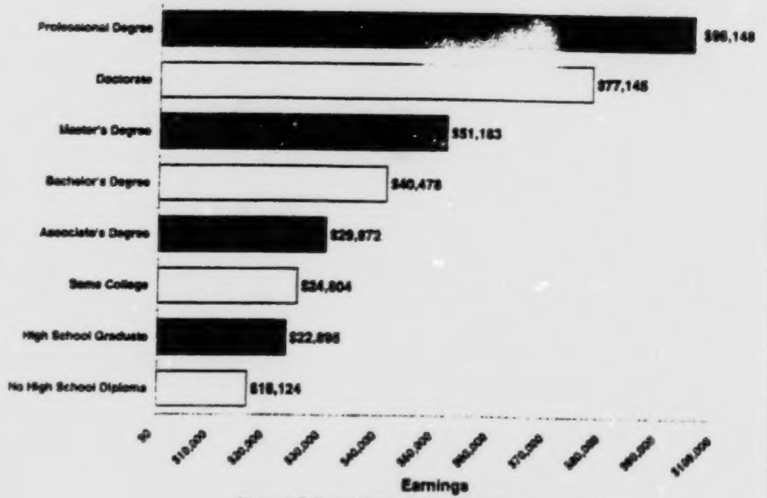
Securing a good job that pays middle class wages requires some college

Continuing education beyond high school is one of the smartest financial investments a person can make. Full-time workers who continue their education beyond high school earn higher salaries than those without postsecondary education. This income gap continues to expand with time and as successive levels of education are attained.

In 1998, the mean annual salary of a college graduate was $40,478; or nearly twice that of someone with only a high school diploma or equivalent.

A master's degree raises an individual's earnings an additional 26 percent on average, while a professional degree increases earnings by another 42 percent.

Increasingly, a college degree is becoming a necessary passport to the middle class. More than any specific skills or qualification gained, employers use the attainment of a baccalaureate degree as a proxy for the baseline level of social and communication skills needed for most jobs in the "office economy."



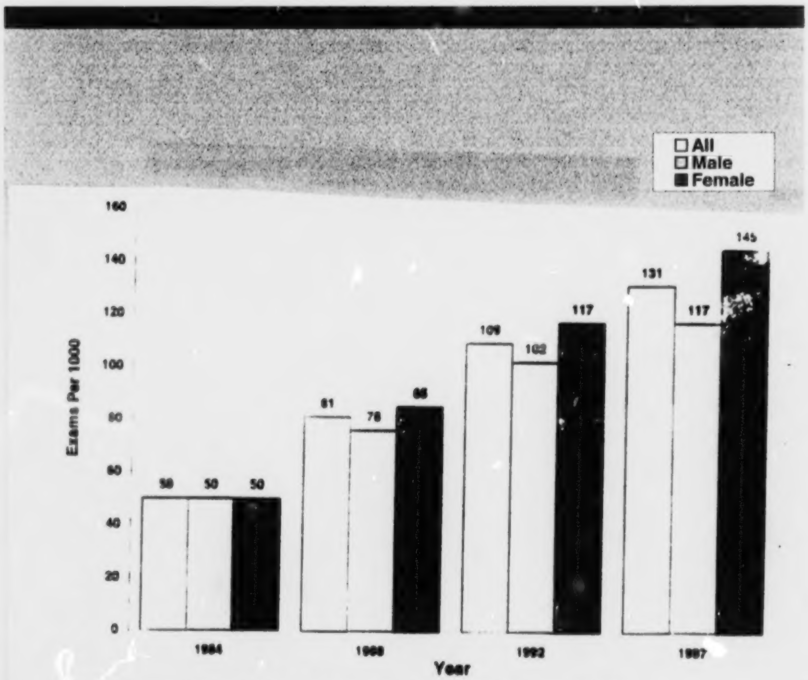
Source: U.S. Census Bureau, Current Population Reports, P20-513.

Mean Yearly Earnings by Highest Degree Held, 1998

Advanced placement courses are gaining popularity among high school students

Between 1984 and 1997 the number of students taking Advanced Placement (AP) exams increased dramatically, from 50 out of every 1000 twelfth-graders in 1984 to 131 by 1997. The AP program offers college-level courses to high school students for which they may earn college credit upon passing an exam. The growing popularity of AP exams reflects two trends in higher education. First, gaining a college degree or some postsecondary education is increasingly important. And second, postsecondary education is expensive. By earning college credit while in high school students can potentially save thousands of dollars in tuition.

Most AP examinations taken in 1997 were in social studies (59 per 1000 twelfth graders) and English (55), followed by physical and natural sciences (35), calculus (33), foreign languages (17) and computer science (3). While female twelfth-graders are more likely to take AP exams generally, males are far more likely to take exams in math and the sciences. Females are more likely to take exams in literature, languages and psychology. Males and females take approximately the same number of exams in the social sciences.



Source: National Center for Education Statistics, Condition of Education, 1999

Number of Students Taking Advanced Placement (AP) Exams Per 1000 12th Graders, 1984, 1988, 1992 and 1997

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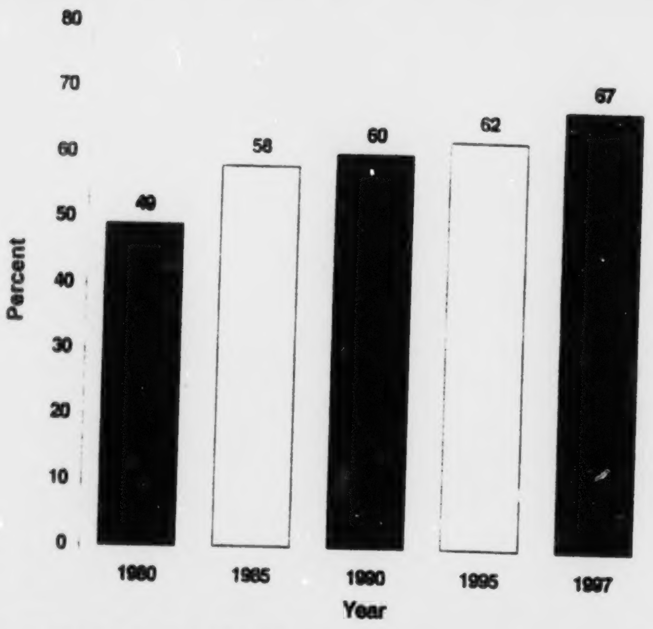
More high school graduates plan to enroll in college

Higher education enrollments increased steadily between 1975 and 1997 despite a decline in the college age population. Two major factors accounted for the expansion of higher education enrollments. First, a greater percentage of high school graduates went on to college than at any time in the past. Second, the number of older, part-time students enrolling in higher education also increased.

In 1998, the number of traditional college-age youth began climbing once again , which in turn is expected to increase demand. Moreover, the 18-24 year old population is expected to rise 17 percent, from 25.5 million to 29.9 million, between1998 and 2009. Similarly, the number of high school graduates is projected to increase from 2.6 million in 1996-97 to 3.2 million in 2008-09, an increase of 23 percent.

Of 1997 high school graduates, 67 percent went on to postsecondary education. Even assuming no change in the percentage of high school graduates electing to enroll in college, the expected demand is likely to pose a challenge to a number of states.

Percent of High School Graduates Enrolling in College



Source: National Center for Education Statistics, Digest of Education Statistics, 1998.

States are mandating continuing education for professionals

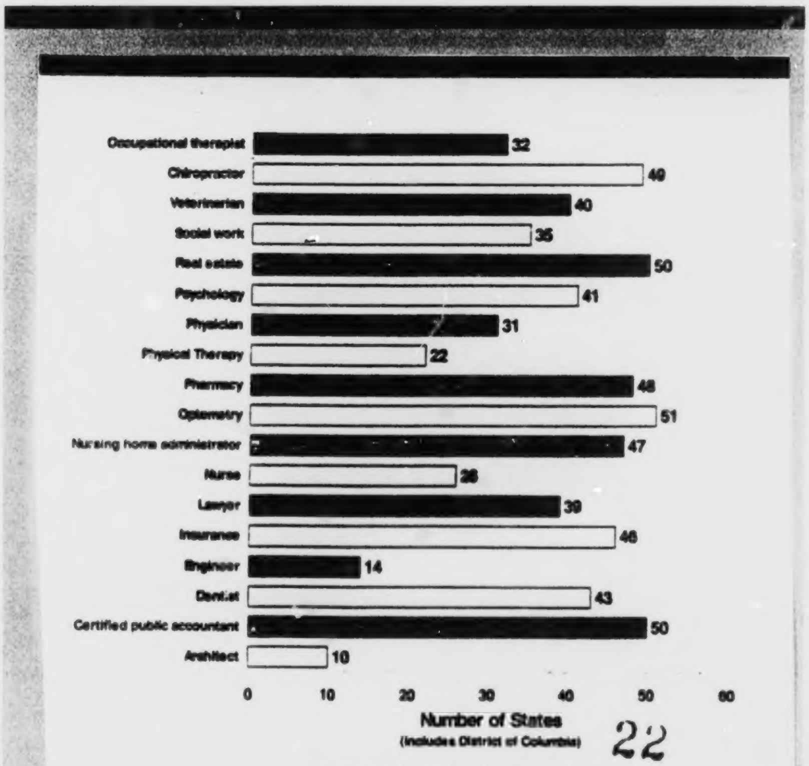
States have a keen interest in the quality of services offered by the nation's professionals and, as a result, are mandating continuing education for general professions. Professions, too, are placing a premium on education and training. They want to ensure that professionals maintain their knowledge and skills and stay abreast of the latest developments and practices in their areas of specialty. Mandatory professional continuing education usually implies that professionals must complete a designated number of hours of study at an approved educational institution. Typically, higher education-based professional programs exceed minimum requirements for state-licensed professions.

Between 1981 and 1998, 12 states implemented mandatory continuing education for certified public accountants (CPAs). Every state but one now requires mandatory continuing education for CPAs.

Twenty-seven more states approved mandatory continuing education for lawyers between 1981 and 1998, bringing the total to 39.

Mandatory continuing education for pharmacists rose from 22 to 48 states between 1981 and 1997.

Real estate brokers are now required to take continuing education in 50 states.



Source: Louis Phillips Associates, 1999.

Number of States with Continuing Education Requirements in Selected Professions

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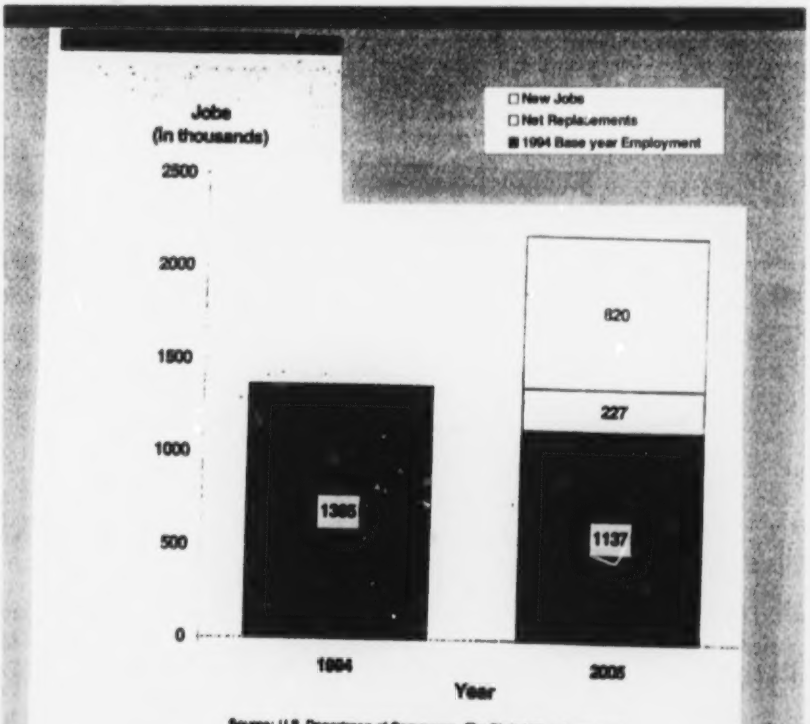
Most information technology jobs are not in high tech companies

Many businesses in the United States are finding that they cannot hire all the information technology professionals they need. One study estimated the number of IT vacancies at 346,000 in the fall of 1997. Another study estimated that number had grown to 400,000 by 1998. In total, it is estimated that U.S. employers will need to find more than one million new computer scientists and engineers, systems analysts and computer programmers between 1994 and 2005.

The majority of IT vacancies are not in IT companies, but in traditional companies seeking ways to use the tremendous advances in information technology to raise productivity and increase the quality of their output. Demand is expected to rise in the coming years as capital investments in technology infrastructure continue and opportunities to apply the technology become more ubiquitous.

Companies affected by the shortages are seeking ways to alleviate the problem by stepping up recruitment and in-house training efforts. Continuing higher education has also played a large part in the effort by responding to the need by developing a broad array of IT training programs and continually updating their offerings and course formats to meet students' changing needs.

IT Jobs and Job Growth, 1994-2005 Projected



Source: U.S. Departmen of Commerce, *The Digital Workforce*, 1999.

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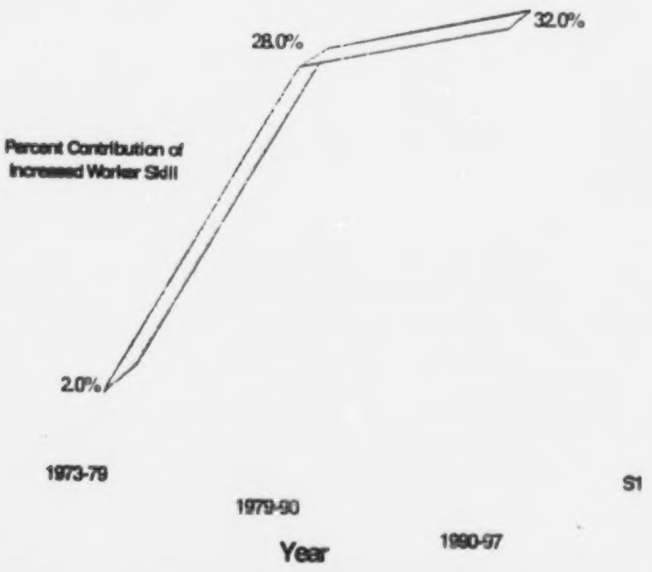
Recent productivity gains derive from a workforce with higher skill levels

Increasingly, education and skills are seen as important determinants of the employability and income potential of a worker. The clear trend is that the productivity of labor, the output produced per hour of work, is becoming more and more a function of what the employee knows and can do. This is true in spite of the great productivity gains associated with Internet technology.

The labor market responds to productivity gains in a particular factor of production by demanding more of it. The net effect is that employers increasingly seek skilled and educated workers. The demand for education thus increases.

In the space of just two generations, the educational requirements for those in the U.S. workforce have escalated markedly. In 1948, men who had finished less than 12 years of formal education completed 60 percent of the hours worked by men. By 1997, this figure had dropped to 12 percent. Women with less than 12 years of formal education accounted for 50 percent of hours worked by women in 1948 and only 9 percent in 1997.



Source: U.S. Bureau of Labor Statistics, Report on the American Workforce, 1999

Percentage Contribution of Increased Skill to Total Increase in Labor Productivity, 1973-1997

CHAPTER 2

Responding to Diverse Learner Needs

U.S. demographics will change markedly by 2025

Between 2000 and 2025, population in the West is projected to grow nearly twice as fast as the national average, while the Northeast and Midwest will grow at one-half the national average.

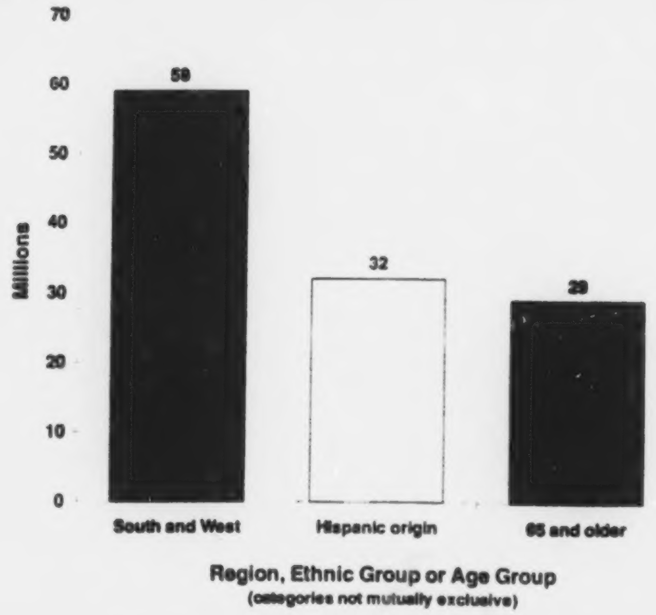
The South will continue to be the most populous region. The Midwest, presently the second most populous region, will switch places with the third most populous region, the West, by 2005.

The white population, the largest racial/ethnic group, will grow most slowly. The African American population will expand slightly faster than the white population, but more slowly than either the Asian or Hispanic populations.

Owing to its high rate of immigration, the Asian population is expected to grow fastest in all regions, increasing by 7 million in the West and 2 million in the Northeast by 2025.

The population of Hispanic origin, the second fastest growing, will account for 44 percent of the 72 million persons added to the U.S. population by 2025.

The population of people aged 65 and over will increase from 33.6 million to 62 million. The number of states with at least 15 percent elderly will expand from 4 to 48 between 1995 and 2025.



Estimated Growth in Southern and Western Regions, Hispanic-origin Population, and Persons Aged 65 and Older, 1995-2025

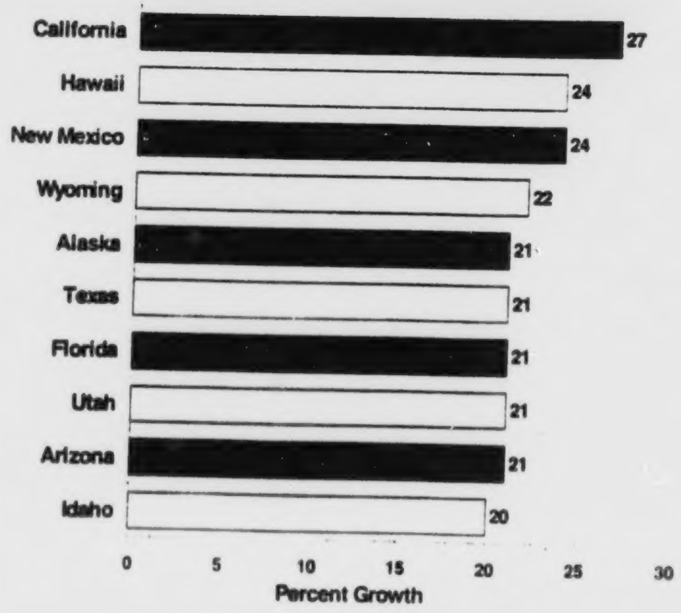
Source: U.S. Bureau of the Census, Population Paper Listings PPL-47.

Ten states are projected to experience 20 percent growth in population by 2015

The 10 states projected to grow by 20 percent or more in the next 15 years will add nearly 20 million people to the U.S. population. Five of these states (Arizona, Utah, Idaho, Texas and Florida) were also among the 10 fastest growing between 1990 and 2000. The population of Nevada will grow 17 percent between 2000 and 2015 after growing over 45 percent in the 1990s.

Rapid growth strains existing educational resources. Though the mix of components affecting growth is different in each state, all can expect to experience soaring demand for educational services. Some states will experience larger growth in the traditional college age population while others will see their populations of retired and semi-retired people grow more rapidly. Some will have a greater influx of immigrants and all may experience rapid development of once relatively rural areas.

College and university continuing education units will be an important part of the overall strategy to meet the demand that is ahead. They will be counted upon to provide learning opportunities that address the changing needs of an ever more highly skilled workforce.



States with the Fastest Population Growth, Projected 2000-2015

Source: U.S. Bureau of the Census, Population Paper listing #47.

More Americans are earning a college degree

The dramatic rise in Americans' levels of educational attainment during the past quarter century is apparent in the number of college graduates in the U.S. population.

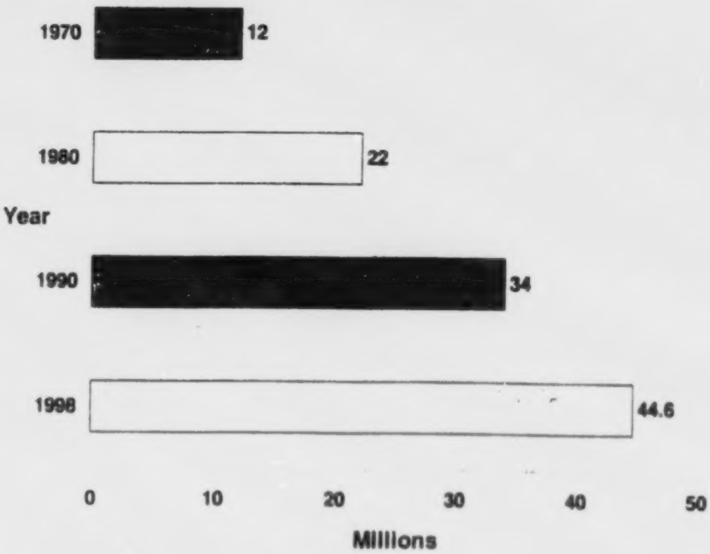
The increase in the educational attainment of Americans is helping to spur the enrollments of part-time students at the pre- and post-baccalaureate levels. Research shows that there is a consistent relationship between level of educational attainment and the propensity to pursue continuing education opportunities during one's lifetime.

In 1970, only 12 million Americans aged 25 years and older had a college degree. By 1997, 41 million had college degrees.

Forty-two percent of pre-baccalaureate students attend part-time, and an estimated 60 percent of graduate degree candidates are part-time students.

It is estimated that three out of four jobs today require some postsecondary education.

U.S. Population Aged 25 and Older with College Degrees: 1970, 1980, 1990 and 1998

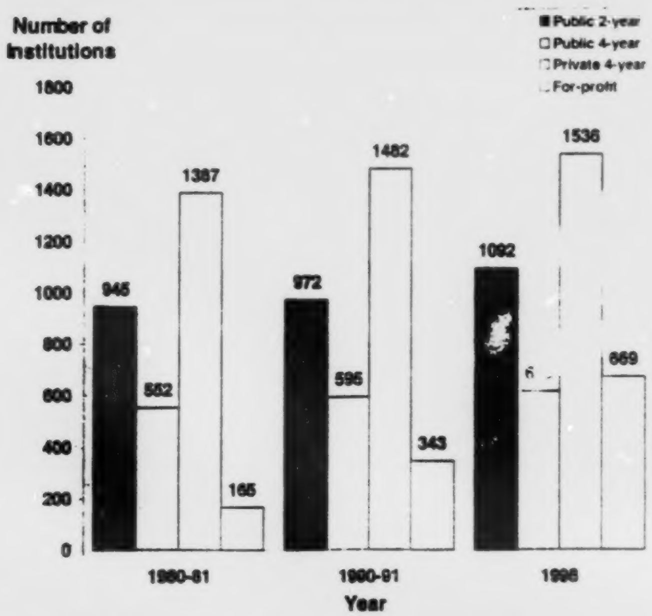


Source: National Center for Education Statistics, *Digest of Educations Statistics, 1998*; Census Bureau, P20-513.

Private sector education providers are multiplying

In the space of less than two decades the number of for-profit higher education institutions has grown four-fold. In the same time period, the number of public two-year institutions increased by 15.5 percent, public-four year institutions by 11.4 percent, and private four-year institutions by 10.7 percent. The rapid growth of for-profit providers reflects strong demand for the job-related educational training that these institutions offer and the flexibility they afford students. The growth of private sector providers has also been facilitated by the adoption of information technology that has made it easier for new providers to enter the higher education market without having to incur the expenses associated with a brick and mortar campus.

The largest for-profit providers now rival the largest traditional colleges and universities in enrollment numbers. The University of Phoenix serves nearly 70,000 students at 28 campuses and 57 learning centers nationwide. DeVry Institutes serve more than 30,000 students on 16 campuses in the United States and Canada.



Source: National Center for Education Statistics, *Higher Education General Information Survey*

Institutions of Higher Education by Type, 1980-81 to 1998-99

More employers are creating corporate universities

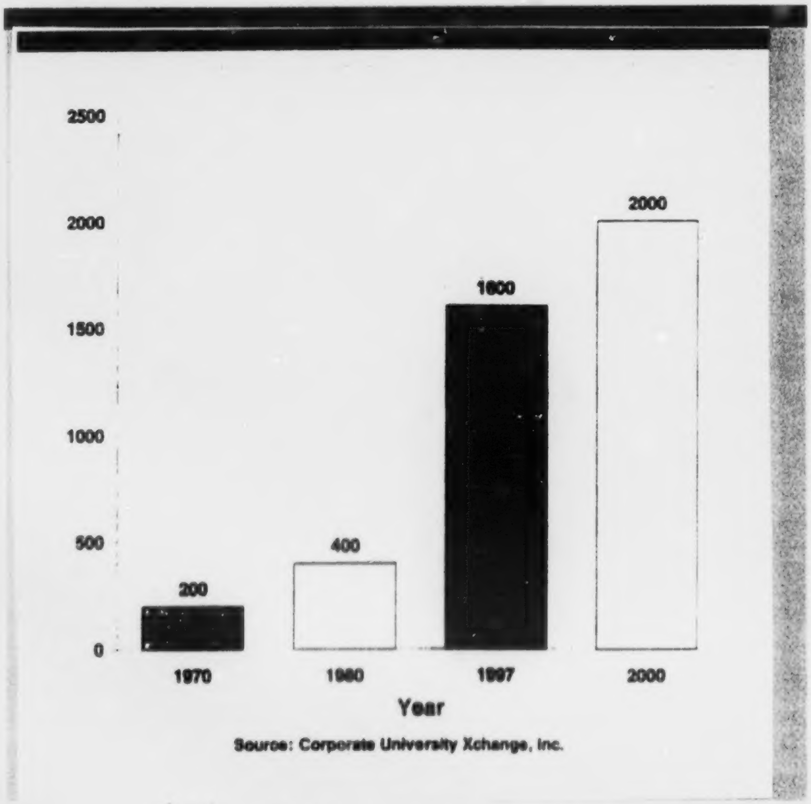
Corporations are beginning to more actively participate in the professional education and development of their employees. They recognize that raising the "knowledge capital" of an organization can help it reach its goals, particularly as the economy becomes more knowledge-based.

Corporate universities allow organizations to take a systematic approach to the learning and development of employees.

The ten-fold growth in the number of corporate universities since 1970, is indicative of the value of this approach to training to the companies' bottom line. Over 40 percent of Fortune 500 companies have corporate universities. The average corporate university budget is near $20 million, representing 2 percent of the average organization's payroll.

Corporate universities simultaneously present opportunities for partnership with traditional colleges and universities, as well as direct competition in the workforce training market. Institutions of higher education are effectively partnering and competing in this market. Continuing to do so requires that they remain flexible enough to respond to the rapidly evolving demands of the business community.

Projected Growth in Corporate Universities, 1970-2000



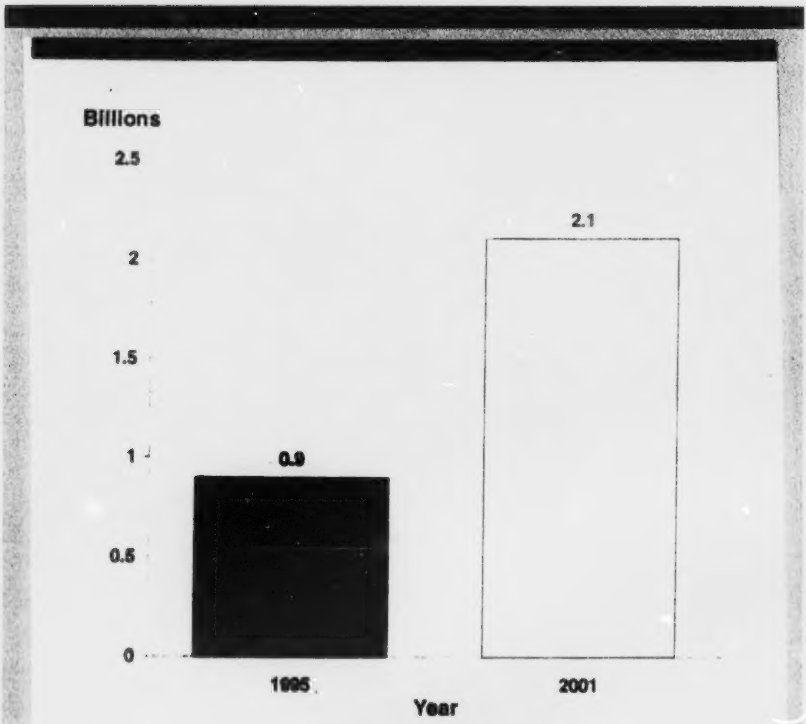
Source: Corporate University Xchange, Inc.

Certification programs help ease the IT worker shortage

One of the major trends in IT training is the growth of certification programs. The number of exams is growing at 30 percent annually, with the market more than doubling in 6 years, from $0.9 billion to $2.1 billion.

Certificate programs accomplish several objectives in the IT labor market. First, employers are able to quickly assess the qualifications of a potential employee. Second, the programs are short in duration, giving job seekers a time-efficient way to enhance their marketability. Third, by giving employers a method to quickly assess the skills of a job applicant and giving applicants a quick and reliable method to augment their skill base, productive pairings of job openings and applicants to competently fill them are facilitated.

IT certification programs are offered both by traditional higher education institutions and software vendors such as Microsoft and Novell. Employers value IT certificates regardless of where they are earned.



Source: Wave Technologies, 1999

IT Training Dollars Spent on Certification, 1995 and Projected 2001

Most part-time students are over 30 years of age

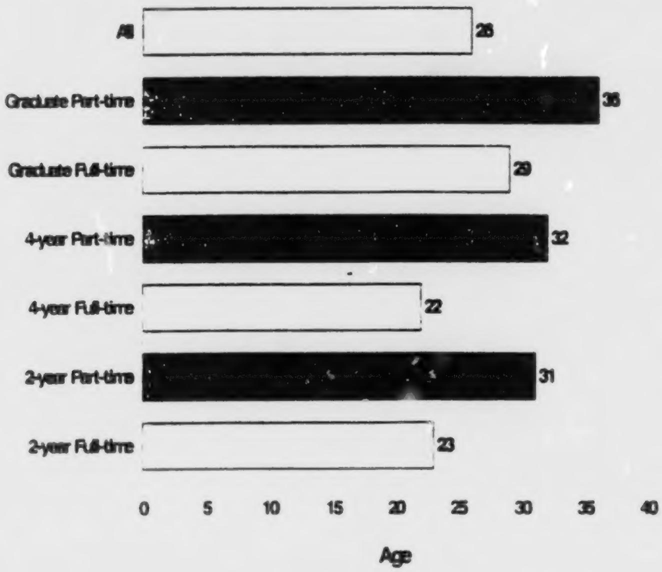
From 1980 to 2000, part-time enrollments in higher education are estimated to have grown 27 percent, from just under 5 million to over 6.3 million. In the same period, part-time enrollments among women age 35 and older have grown an estimated 137 percent.

A number of factors may help explain these enrollment trends among older students. Older students often return to school after having been in the workforce for some time in order to finish a degree or earn an advanced degree so they can make a career change. Another reason is that in today's economy workers often must take courses to upgrade skills. The strong growth in part-time enrollments reflects the fact that most of these students are already in the workforce and cannot afford to quit their jobs to attend full-time.

Total higher education enrollments of students age 30 and older have grown 63 percent to 4.3 million, growing from 22 percent in 1980 to nearly 30 percent of all higher education enrollments in the year 2000.

Older students often face obstacles to pursuing continuing education that younger students do not. They are more likely to have career and family obligations that preclude full-time study and make even part-time study difficult to combine with their other responsibilities.

Average Age by Level, Institutional Type, and Enrollment Status, 1997



Source: Calculated from Department of Education data.

Most part-time students attend two-year institutions

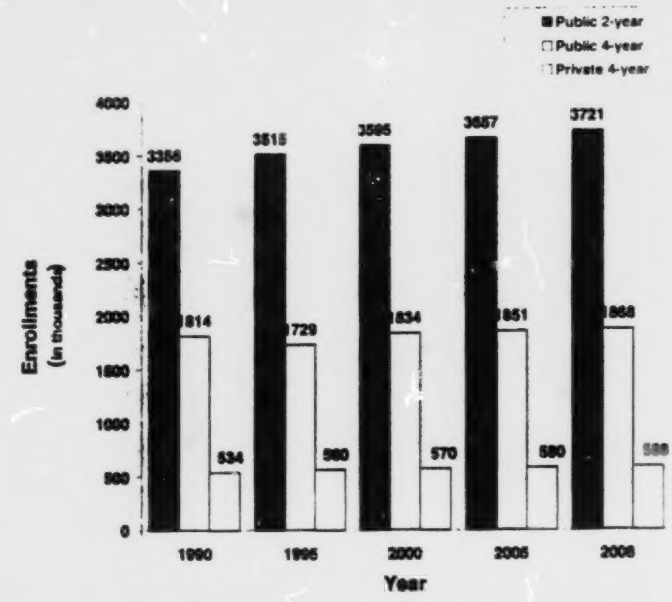
Due to the relatively steady and affordable cost of community college coursework, large numbers of part-time students choose to do at least some of their coursework at two-year institutions. As two-plus-two programs between community colleges and four-year institutions continue to multiply, these students will have the opportunity to finish a four-year degree after they have completed their community college work.

During 1997, over 15 million student enrollments were recorded by the nation's higher education institutions. Part-time student enrollments totaled an estimated 6.1 million, or more than 42 percent of all higher education enrollments.

The majority of part-time student enrollments (56 percent) were in public two-year institutions.

Total part-time student enrollments at two-year institutions surpassed full-time enrollments by nearly two to one.

Forty-four percent of the part-time student enrollments were in four-year institutions.



Source: National Center for Education Statistics, *Projection of Education Statistics to 2008* and *Digest of Education Statistics, 1998*.

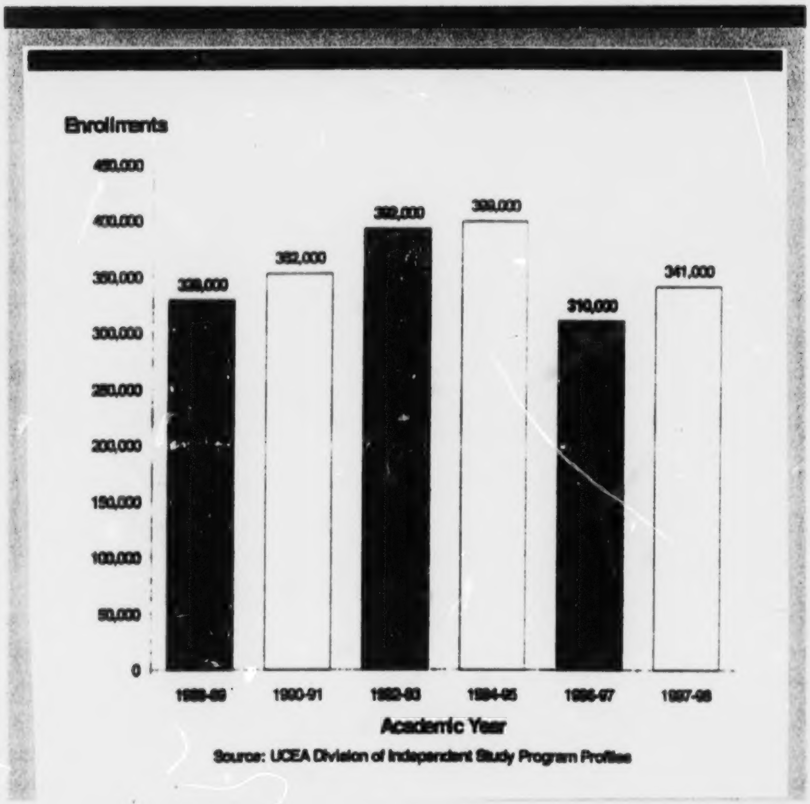
Part-time Enrollments by Institutional Type, 1990 - Projected 2008

Independent study enrollments remain substantial

Independent study programs at four-year higher education institutions showed remarkable growth during the 1980s. These programs offer college level credit and non-credit courses, as well as high school diploma programs by correspondence. A number of institutions also offer external degrees, which can be completed with a minimum amount of time on campus.

Independent study is recognized as an indispensable part of American higher education. Such study is usually defined as an educational process in which a student is able to complete a course of study where and when the student chooses, instead of attending regularly scheduled classes. Students engaged in independent study use not only correspondence instruction, but also television, audio cassette tapes, and computer-assisted learning. For students who hold full-time jobs that require frequent relocation and/or travel, independent study offers a means to earn degree credit and to advance their careers.

Independent Study Enrollments at UCEA Member Institutions



Source: UCEA Division of Independent Study Program Profiles

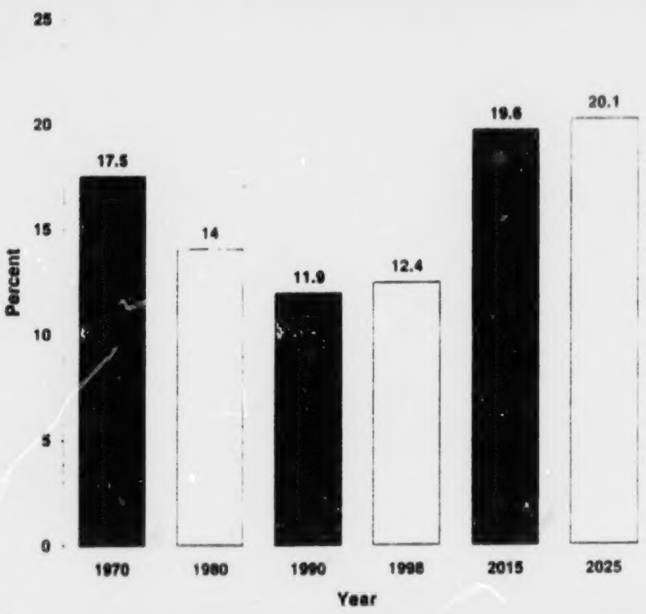
Baby boomers are likely to stay in the workforce longer

The proportion of the workforce over the age of 54 will rise markedly in the next 20 to 25 years. Though it is unclear precisely what role older workers will take in the U.S. labor force, they appear likely to want to stay in the workforce longer than older workers in the past. Workers increasingly express a preference for working longer.

Seventy percent of Baby Boomers expect to have a "phased retirement" in which working hours are gradually decreased or part-time "bridge jobs" in different occupations after a full-time career job.

The economy will need these workers. In 1950 there were seven working age people for every person age 65 and older. In 2030 there will be fewer than three. This will put a tremendous strain on the economy as Social Security entitlement payments explode and the labor market tightens. Pending legislation will allow older workers to receive full Social Security benefits regardless of how much they earn.

Presently, few older workers receive employer-sponsored training. But research indicates that they and their employers could benefit from training. If training is available, older workers will stay in the workforce longer at a time when they are needed. Furthermore, job tenure after receiving training is higher for older workers than for younger ones.



Source: Bureau of Labor Statistics, *Monthly Labor Review*, December, 1999.

Percent of the U.S. Workforce Age 55 and Older, by Year

More women than men earn bachelor's degrees

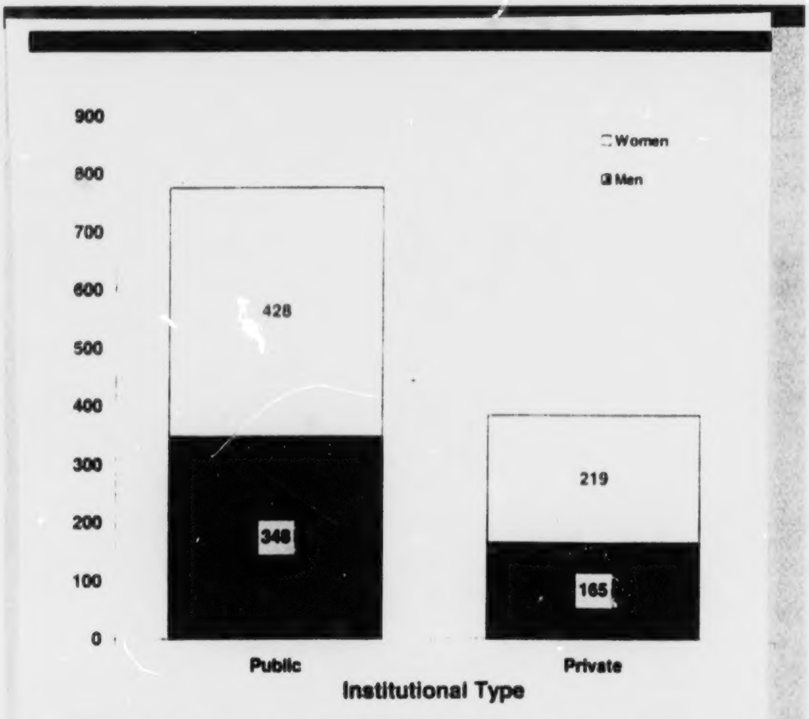
Four-year institutions in the United States conferred nearly 1.2 million bachelor's degrees in 1997. Public institutions granted approximately 66 percent of these degrees.

Reflecting their larger enrollment numbers, women earned 25 percent more bachelor's degrees than did men. Women have been earning more baccalaureate degrees than men since 1982.

Since 1985 the number of bachelor's degrees granted yearly has grown 19 percent. Most of this increase can be attributed to continued strong growth in the number of women receiving degrees.

Minority students earned 19.4 percent of bachelor's degrees conferred in 1997.

Bachelor's degrees accounted for 51.3 percent of degrees granted in 1997, followed by associate's degrees (25 percent), master's degrees (18.3), first-professional degrees (3.4 percent) and doctorates (2 percent).



Baccalaureate Completions at Public and Private Institutions, in thousands, 1996-97

Source: National Center for Education Statistics, "Completions" survey, 1996-97.

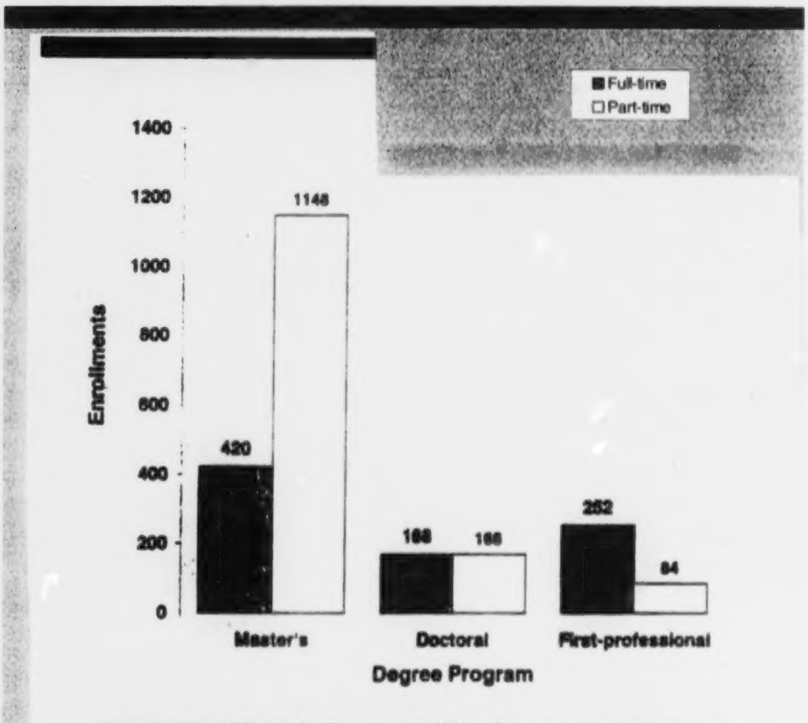
Most graduate students are part-time and pursuing master's degrees

Large numbers of students are going back to earn master's degrees that will benefit them professionally. The value of post-baccalaureate study continues to increase as a greater number and proportion of jobs require a higher level of knowledge and skills.

Of the 2.24 million students enrolled in graduate and first-professional education in 1995-96, 70 percent were enrolled in master's degree programs, 15 percent in doctoral programs, and 15 percent in first-professional programs. Part-time master's students accounted for 51 percent of all graduate, degree-seeking enrollments. Fifty percent of doctoral students enroll part-time. Seventy-five percent of first-professional students enroll part-time.

In 1997, approximately 68 percent of graduate students were enrolled in public institutions. Women constituted a majority of enrollments at public and private doctorate-granting and master's-granting institutions, but men made up the larger share of enrollments at Research I institutions.

Women accounted for 57 percent of all master's degrees awarded in 1997, 42 percent of first-professional degrees, and 40 percent of doctoral degrees. Minority students received 14.5 percent of master's degrees, 21 percent of first-professional degrees, and 12 percent of doctoral degrees.



Number of Graduate Students, by Degree Program and Attendance Status, 1995-96

Source: National Center for Education Statistics, *National Postsecondary Student Aid Study*, 96-139.

Education and MBA are the most popular master's programs

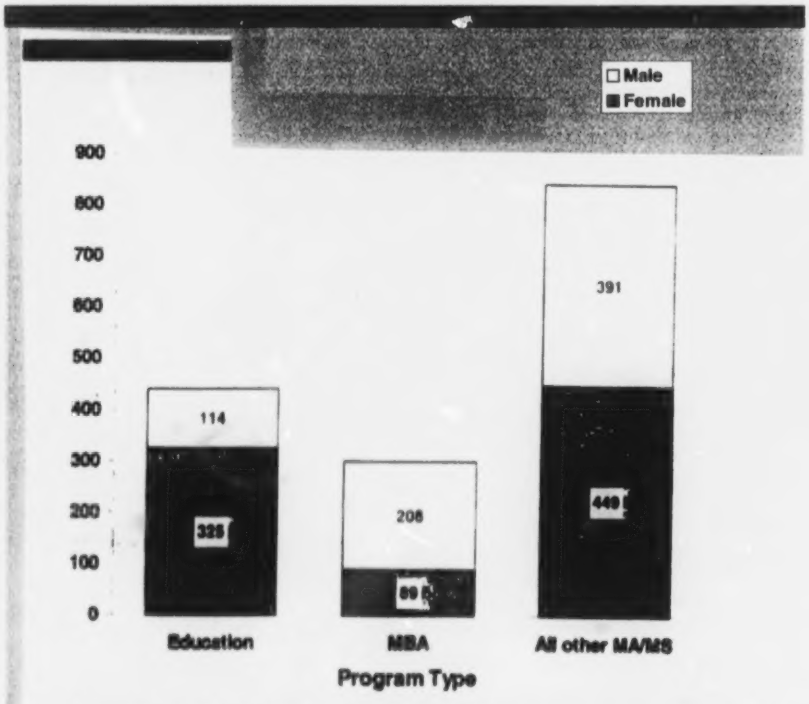
In 1995-96, 28 percent of master's degree students were seeking degrees in education and 19 percent were seeking MBAs. The remaining 53 percent were seeking master's degrees in other fields or other types of master's degrees, such as Master of Social Work, Master of Fine Arts or Master of Arts in Library Science.

Seventy-four percent of education master's students attend part-time, compared to 68 percent for MBA students and 62 percent for all others.

MBA programs have become very popular in recent years owing to the high average pay of MBA recipients, particularly in a strong economy, and the increased availability of online MBA programs. Peterson's *Guide to Distance Learning Programs* lists 129 online MBA programs in 2000.

Enrollments in education master's degrees are also rising. It is estimated that 2 million new teachers will be needed in the next ten years.

Master's Degree Enrollments by Gender and Program Type, 1995-96



Source: National Center for Education Statistics, National Postsecondary Student Aid Study, 98-139.

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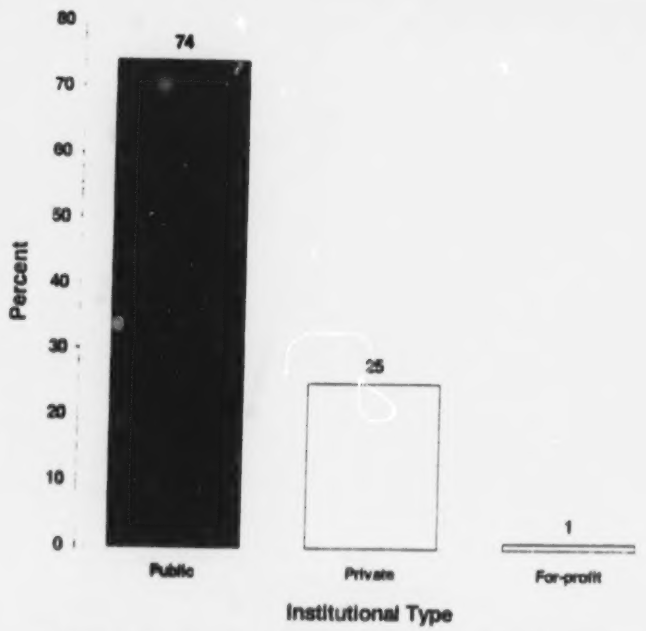
Growing enrollments in teacher certification programs attest to the popularity of teaching as a second career

The number of new teachers needed in the next 10 years is estimated to be 2 million. Institutions of higher education are responding by offering more degree and training programs in teacher education. Response to the demand for new teachers has been strong. While total enrollments in institutions of higher education increased 15 percent in the last 15 years, the number of new education graduates jumped 49 percent — from 134,870 in 1983 to 200,545 in 1998.

Overall, 54 percent of entrants to postbaccalaureate teacher preparation programs were transitioning from an occupation outside of teaching in 1998. Postbaccalaureate programs leading to certification but not to a graduate degree are offered by 58 percent of public institutions and 42 percent of private institutions. Programs leading to certification and a graduate degree are offered by 55 percent of public institutions and 35 percent of private institutions. The average age for an undergraduate enrolled in a teacher preparation program is 22.5, of which 13 percent are enrolled part-time. In postbaccalaureate programs the average age is just over 30. Forty-three percent of postbaccalaureate participants enroll part-time.



Percent of Graduates from Teacher Preparation Programs by Institutional Type, 1999

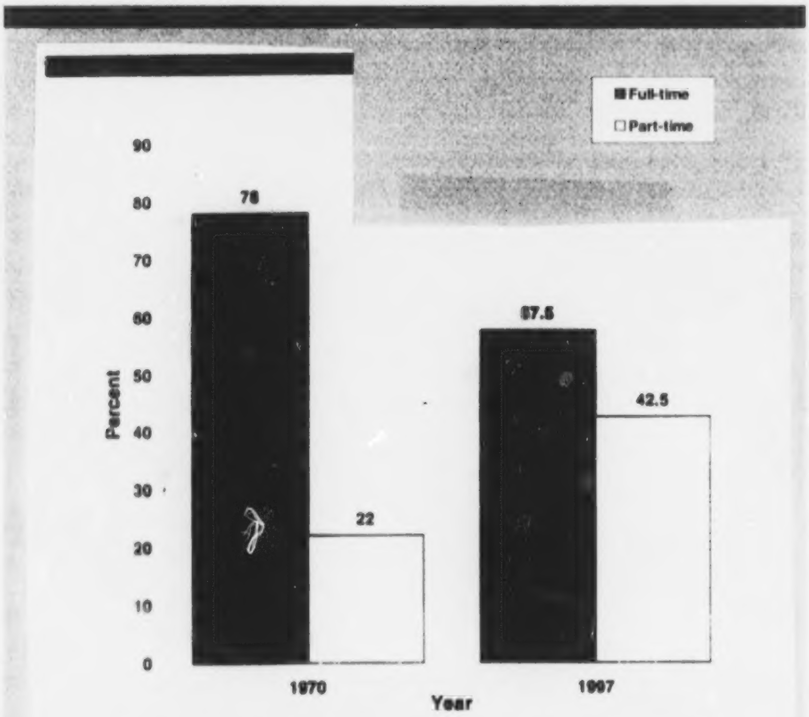
Source: National Center for Education Information, *The Making of a Teacher*, 1999.

Part-time instructors may soon account for 50 percent of higher education faculty

While colleges and universities continue to hire both full-time, tenure-track faculty and part-time faculty, the long-term trend toward more part-time hires continues. From 1993 to 1997 the number of full-time faculty employed at U.S. colleges and universities grew by 0.3 percent while part-time faculty employment grew 5.2 percent.

The hiring of part-time faculty allows institutions to be more flexible and responsive to learner demands. Many part-time faculty have senior level management or professional positions and bring a valuable practice-based expertise to their teaching.

Increased reliance on part-time instructors, however, is disturbing for individuals who wish to have full-time academic careers. In this case, a part-time faculty member is generally paid much less, has fewer benefits and less job security than a full-time faculty member.



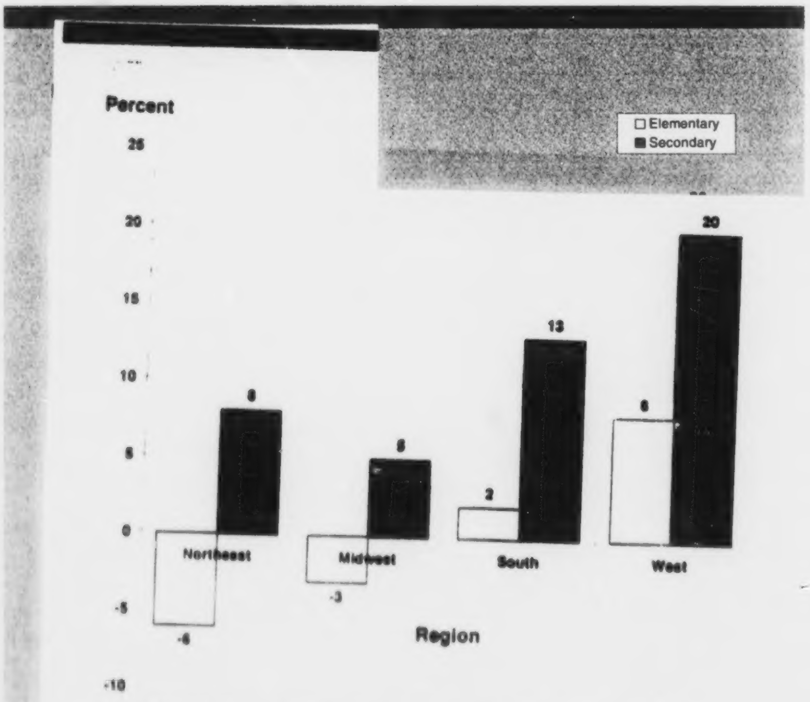
Percent Distribution of Full-Time and Part-Time at Postsecondary Institutions, 1970 and 1997

Source: National Center for Education Statistics, Fall Staff in Postsecondary Institutions data file, 1972, 1999.

The "Baby boom echo" will increase demand for new K-12 school teachers

With those in America's Baby Boom generation now raising their own children, enrollments in K-12 schools are projected to reach record levels in the next 10 years. Between now and the year 2006, enrollments in U.S. elementary and secondary schools will climb to a record 55 million, far exceeding the enrollment record set by the original baby boomers.

To accommodate more school children, America will need approximately 190,000 new teachers and 6,000 more schools. States with the largest projected increases, such as Delaware and California, will need to meet the demand for new teachers and new infrastructure. Continuing higher education is likely to play a key role in certifying and upgrading the skills of teachers. For example, it is an important provider of one-year Master of Arts in Teaching (MAT) degrees for liberal arts graduates, training for teachers of Limited English Proficiency students, part-time master's degree studies, and special in-service and certificate programs for teachers.



Source: National Center for Education Statistics, Projections of Education Statistics to 2009, 1999.

Projected Percent Change in Elementary and Secondary Enrollments by Region, 1997 to 2009

CHAPTER 3

Paying for Lifelong Learning

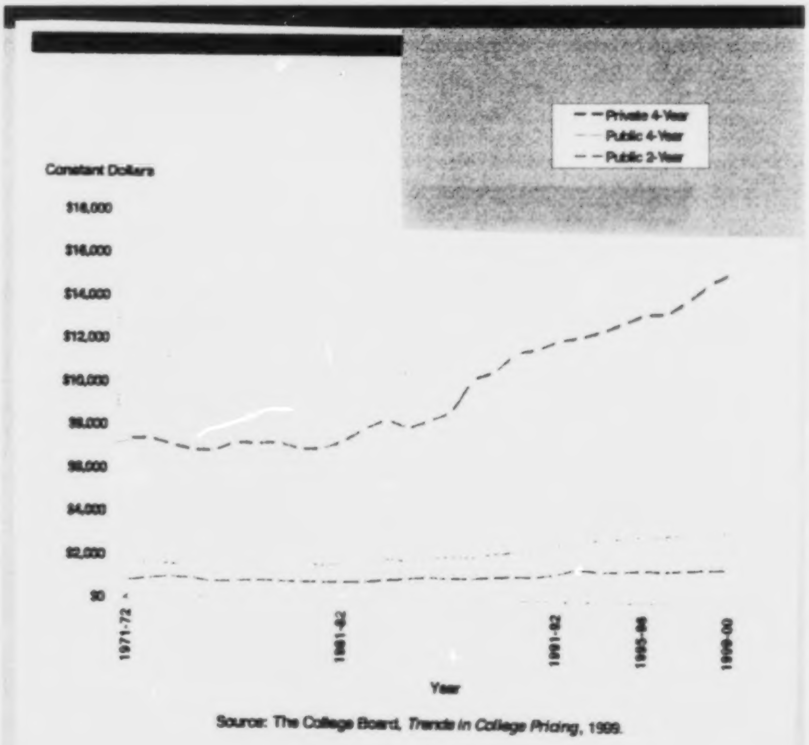
Tuition fees continue to climb

In the 1970s, the price of a college education did not rise appreciably. But in the 1980s and 1990s, prices have risen significantly, ultimately restricting access to higher education and increasing the average debt burden borne by those who attend. Since 1980-81, both public and private four-year college tuition increased on average more than 110 percent over the rate of inflation.

For all types of higher education institutions, federal, state and local government sources contributed 49 percent of the current fund revenues in 1980. By 1996 revenues from government sources had fallen to 39 percent. In the same period, monies from tuition and fees rose from 20 percent to 28 percent of current fund revenues.

The dramatic rise in tuition costs is particularly problematic in light of the fact that the median family income has risen only 22 percent since 1981. Moreover, incomes below the median have grown more slowly than those above. This means that the share of family income required to pay for college expenses has risen faster for medium- and low-income families than for higher income families.

Average Tuition and Fees by Institutional Type 1971-1999



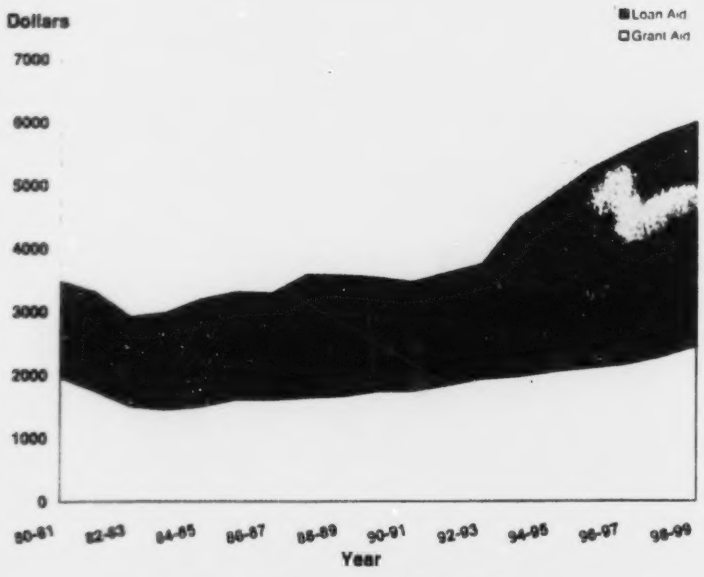
Source: The College Board, *Trends in College Pricing*, 1999.

Loans far surpass grants as a source of student aid

In the past 25 years, the federal student aid system has changed from one in which grants made up the larger share of aid to one in which loans make up well over half of all federal student aid disbursements. This has had a tremendous effect on the way students and families finance postsecondary education. More students now must work and/or attend part-time in order to be able to afford to pursue higher education.

Available student aid was just over $64 billion in 1998-99. In the past decade, total aid has increased 85 percent in constant dollars. But the availability of loan aid has grown much faster, accounting for two-thirds of the increase.

Loans presently comprise 58 percent of the total. Loan aid made up 47 percent of the total in 1992-93 and 41 percent, in 1980-81.



Source: The College Board, *Trends in College Pricing*, 1999

Average Grant Aid and Loan Aid Per Full-Time Equivalent, 1980-81 to 1998-99

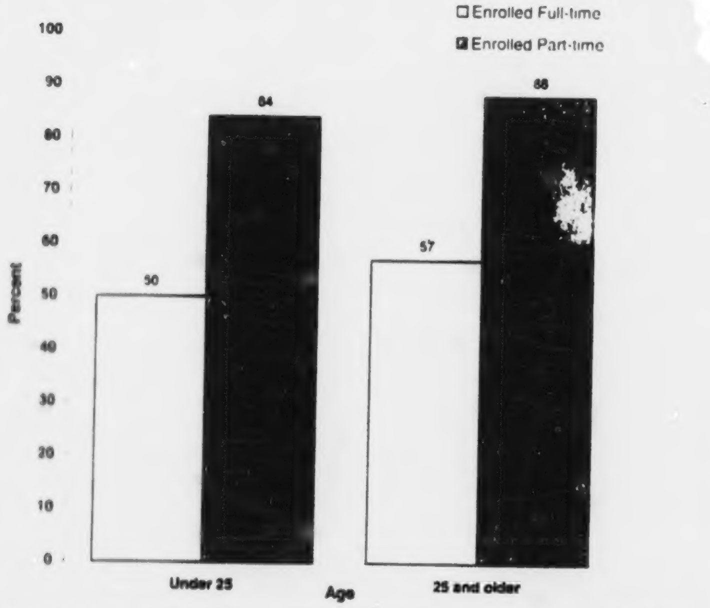
The majority of undergraduate students now work while in college

In 1998, 50 percent of full-time undergraduate students under the age of 25 also worked while they were enrolled. This represents an increase of 2 percent over 1996. Eighty-four percent of part-time undergraduates age 25 and under were employed in 1998; a 1 percent increase over 1996.

The percentages for students 25 and older are higher, with 57 percent of those enrolled full-time also working, and 88 percent of the older part-time students working while enrolled.

As tuition continues to rise and jobs not requiring postsecondary education offer relatively low pay, more students will find themselves having to work more hours in order to afford their studies.

Students with families, particularly single parents, and students from low-income families often find that even part-time study is too difficult to sustain without access to affordable childcare and financial aid.



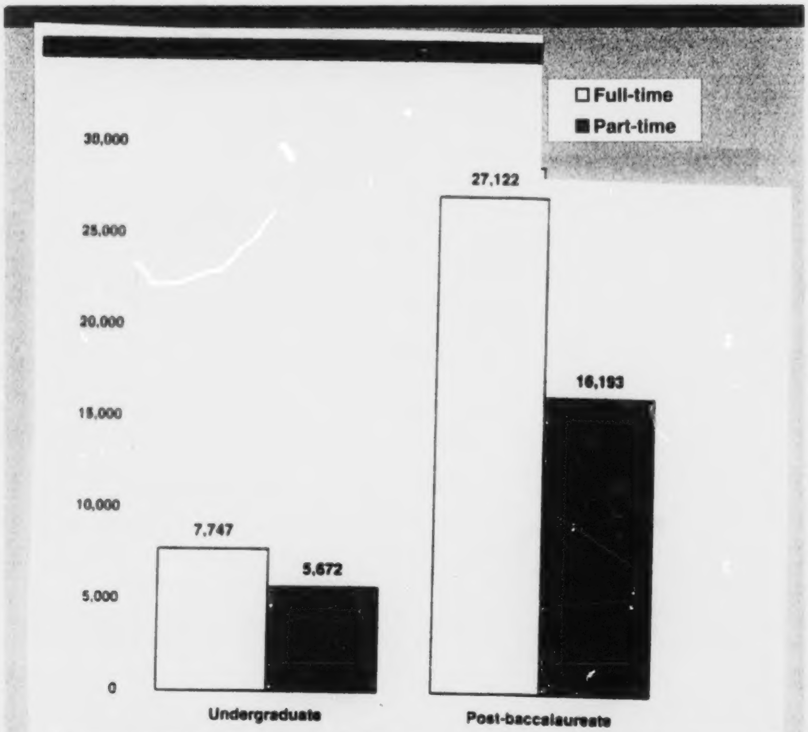
Source: U.S. Bureau of Labor Statistics, 99-175 and unpublished tabulations from Current Population Survey.

Percent of College Students with Jobs, by Age and Enrollment Status, 1998

Many graduates leave college with significant debt burden

Because incomes and grant aid have not kept pace with tuition increases in the course of the past two decades, students are taking out more and more loans in order to finance their education. In addition, parents are not contributing to the financing of their children's education at the same level as in the past. The imperative, in most cases, of assuming at least some student debt forces students to incorporate their willingness and ability to take on debt as they make important decisions about their education.

Many students choose to enroll part-time and work while in school. This is an effective way to reduce the amount of debt that a person assumes while a student. In 1996, the average full-time student finishing undergraduate studies had more than 37 percent more debt than did the average part-time student. For graduate students the difference is similar. The average full-time graduate student had 40 percent more student loan debt than did the average part-time student.



Average Debt Burden for Undergraduate and Graduate Study, 1995-96

Source: National Center for Education Statistics, National Postsecondary Student Aid Study, 1995-96.

Part-time undergraduates receive little tuition assistance

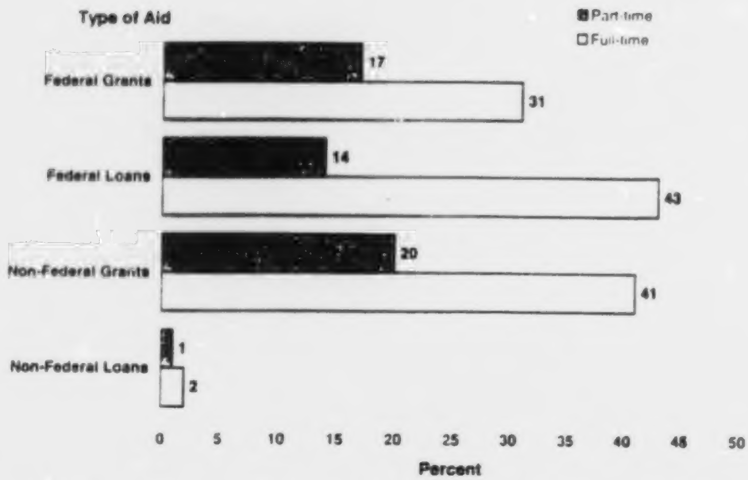
The majority of part-time undergraduate students use their own financial resources to pay for college. In many instances, part-time students are ineligible to receive either state or institutional aid. While matriculated part-time students are eligible for federal assistance, few students actually receive any help from federal grants or loans.

Slightly less than 17 percent of part-time undergraduates received federal grant assistance in the fall of 1995.

The situation was slightly better for non-federal grants, with 20 percent of part-time undergraduates receiving assistance.

Far fewer part-time undergraduates take out loans to pay for their college costs in comparison to full-time students.

Percentage of Undergraduates Receiving Student Aid, by Source and Attendance Status, 1995



Source: National Center for Education Statistics, *Digest of Educations Statistics, 1998*.

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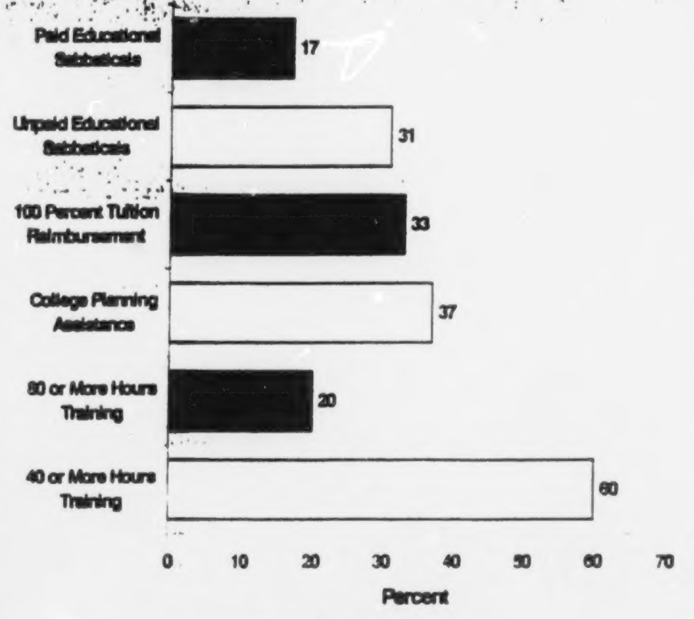
Education benefits help employers retain employees

Opportunities for education and training are being used by employers to attract and retain the best employees. Employers sponsor in-house training as well as underwrite the costs of education away from the workplace. Companies ranked by *Fortune Magazine* as the "100 Best Companies to Work For" paid on average for 43 hours of training for each employee per year. Twenty percent offered in excess of 80 hours of training per employee per year.

Second only to health insurance, continuing education and training benefits were valued most highly by employees. In addition to training, one-third of the companies offered 100 percent tuition reimbursement; 37 percent offered college planning assistance; 31 percent unpaid sabbaticals; and 17 percent, paid sabbaticals.

There are a variety of other benefits offered to employees which are not directly related to education, but can positively affect an employee's ability to pursue continuing education or training. Flex-time, reduced-hour employment, tele-commuting and on-site child care can all make the pursuit of higher education more easily attainable for working people.



Source: Fortune, January 1999.

Percent of "100 Best Companies" Offering Selected Educational Benefits

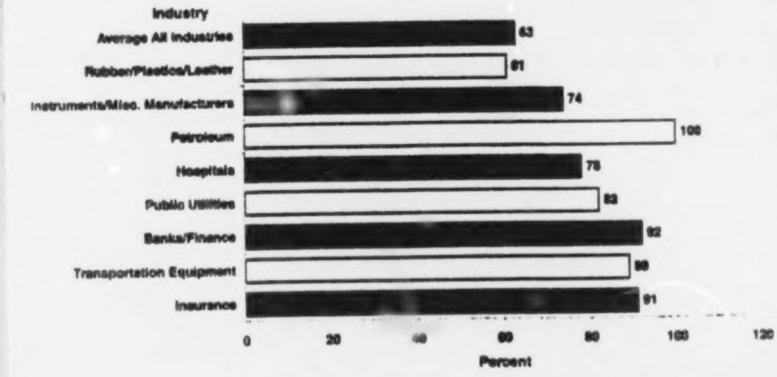
Manufacturing and service industries invest heavily in employee education

Employee educational assistance is a benefit provided by 60 percent of the employers in the manufacturing sector, and 64 percent in the non-manufacturing industries. A full 100 percent of petroleum companies reported providing educational assistance to their employees. Over 80 percent of the insurance firms, transportation equipment makers, public utilities, banks, and finance firms reported offering their employees educational benefits.

These data suggest that both the manufacturing and service sectors are being challenged by rapid change in the workplace to make significant investments in their employees' education and training.

With time away from work one of the most significant cost factors in employee education, employers are especially interested in on-site training opportunities provided by colleges and universities, as well as technology-mediated instruction.

Percent of Firms Providing Educational Assistance to Employees, by Industry, 1998



Source: U.S. Chamber of Commerce, *Employee Benefits Report*

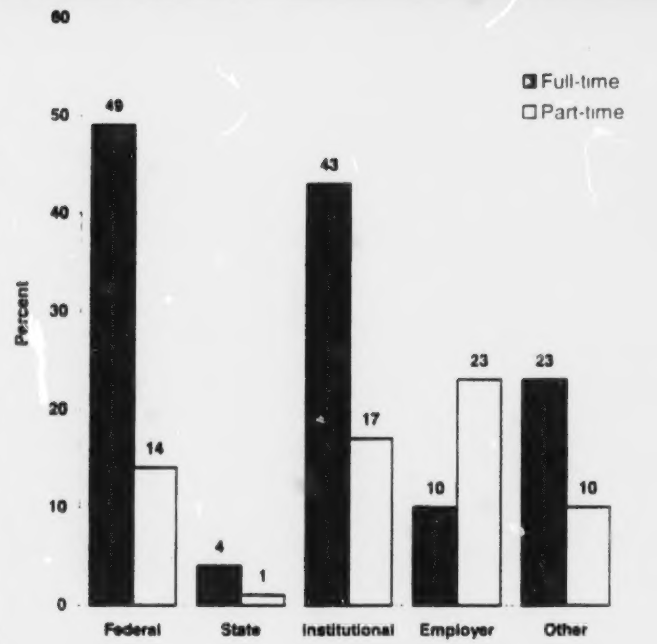
Part-time students finance their studies with personal and employer-provided monies

The nation's part-time students must rely on their own resources and, when they are fortunate, on employer-provided assistance to support their postsecondary studies. Prior to July 1996, employer-provided tuition assistance for graduate students was deductible up to $5,250 per student per annum. When Congress failed to renew the federal tax exclusion for graduate studies it caused many employers to cease providing non-job related tuition assistance.

Employer-provided educational assistance increasingly is tied to job-related education and job performance. Employers have taken a particular interest in the development of competency and performance-based education. This gives them a greater measure of assurance that their employees are prepared for increased job responsibility and complexity.

Only 14 percent of all postbaccalaureate, part-time students receive aid of any kind from federal student-aid programs.

Eighty-six percent of all students receiving employer-provided education assistance were enrolled on a part-time basis.



Percentage of Undergraduates Receiving Student Aid by Source of Aid and Attendance Status, 1995

Source: National Center for Education Statistics, *Digest of Education Statistics, 1998*.

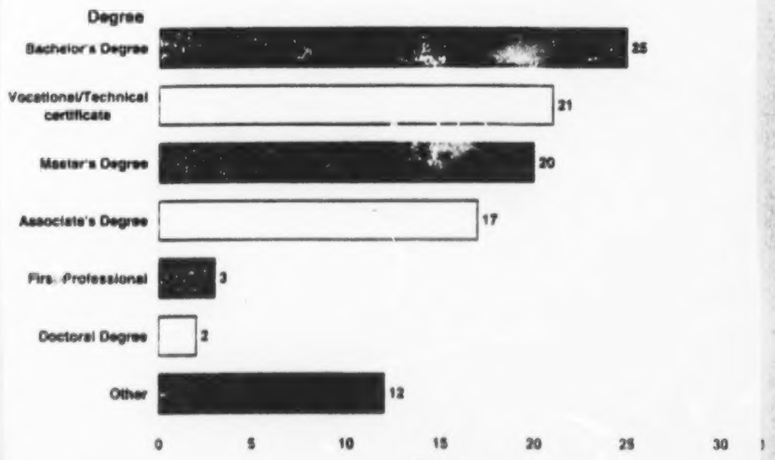
Most employer-sponsored students seek degrees or job skills

Employees in the information age increasingly need skills and credentials to better perform their jobs or to make desired career changes. Employers are becoming more receptive to the ways they can help their employees achieve educational goals.

Section 127 of the Internal Revenue Service code allows employers to make tax-free contributions to their employees for educational purposes, usually in the form of a tax-free tuition reimbursement. When fully instated, Section 127 allows any employer, public or private, to offer employees up to $5,250 in tax free educational assistance for undergraduate level courses.

There are two long-standing debates in the U.S. Congress over this provision. First, Section 127 is not permanent, but must be renewed periodically. It has been extended nine times since its inception in 1978. While some members wish for permanent extension, others do not. Second, graduate coursework has been excluded from Section 127 eligibility since July 1996. Again, while some members wish to extend section 127 to graduate coursework, others do not.

Percentage Distribution of Students Receiving Employer Support for Credential Programs by Degree Sought, 1995



Source: National Center for Education Statistics, Employer Aid for Post-Secondary Education, 1999-181.

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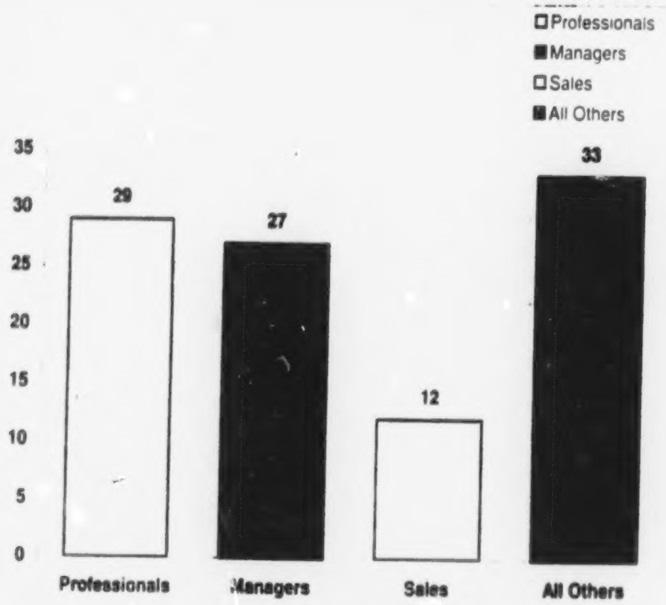
Professionals and managers receive the most employer-sponsored training

Organizations in the United States. with 100 or more employees spent $62.5 billion on formal training in 1998. In 1991 spending was $43.2 billion; a cumulative annual growth rate of 5 percent. Together, professionals and managers accounted for $38.75 billion, or 62 percent of the total.

Organizations increasingly recognize that the training of their employees is better seen as an investment in future productivity than as a cost. It is an investment in two distinct ways. First, a more educated employee is more productive. And second, training is seen as a way to attract and retain talented employees.

With the need for personnel to acquire what are often highly specialized skill sets, companies are turning to colleges and universities to provide custom training programs. Because one of the major costs of training is time spent away from the job, employers are especially interested in on-site learning options—either self-contained, technology-based course-ware, or face-to-face instruction.



Source: Training Magazine, *Industry Report, 1999.*

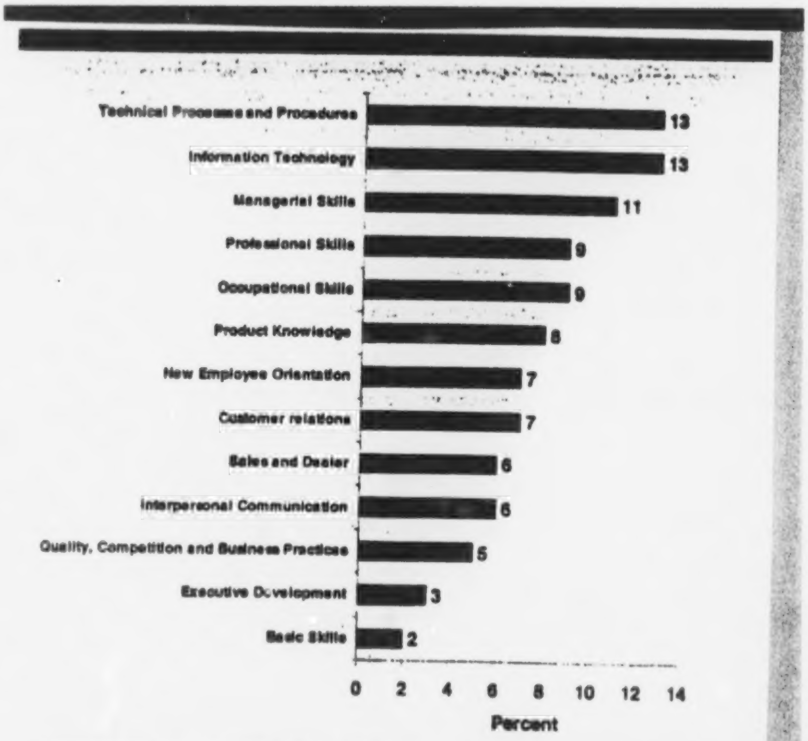
Percent of Training Dollars Spent, by Occupational Group, 1998

IT and computer skills are the most common types of employee training

Computer skills, communication skills and management development were the most prevalent areas of training in 1998, with IT training itself accounting for $19 billion, or over 30 percent, of the $62.5 billion total. IT training is projected to have the strongest growth, an average of 12 percent per year from 1996 to 2002.

Though most IT jobs are not in IT companies, IT companies have the most demand for employees with the highest level of IT skills. Approximately 50 percent of IT company executives cited the lack of skilled workers as the most significant barrier to growth in the coming year and 70 percent of IT companies said that "few" or "some" applicants for IT jobs have the skills the companies are seeking.

The market for IT training is large and fragmented. The top ten IT training companies taken together have only 13.7 percent market share. Competing in this market are traditional higher education institutions, software vendors, and a host of small private sector training providers.



Course Types as a Percentage of Training Expenditures

Source: American Society for Training and Development, *2000 State of the Industry Report*

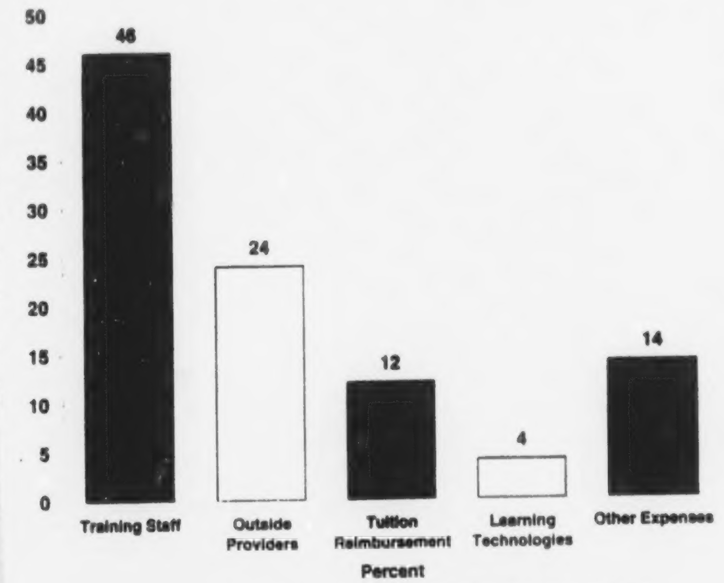
Nearly a quarter of all training dollars are spent outside the organization

The training market is growing rapidly. The total size of the corporate and government training market stood at $98 billion in 1998. Most of this amount, over $60 billion, was spent on corporate training.

The share of this market that is paid to outside sources has been increasing faster than the market as a whole in recent years. From 1995 to 1998 the outsourced market grew by 11.6 percent annually while the general training market grew 3.4 percent. It is expected that outsource spending will continue to grow.

Private sector providers receive the largest share of outsource training expenditures, followed by product suppliers, independent training consultants, four-year colleges and universities, community colleges and technical/vocational institutions.

Still, institutions of higher education constitute a valuable source of workforce training. Those institutions that are able to customize their learning products, keep pace with changing technologies, and provide training on a flexible schedule are also the ones most likely to be successful in the workforce training market.



Distribution of Training Expenditures, 1998

Source: American Society for Training and Development, *2000 State of the Industry Report*

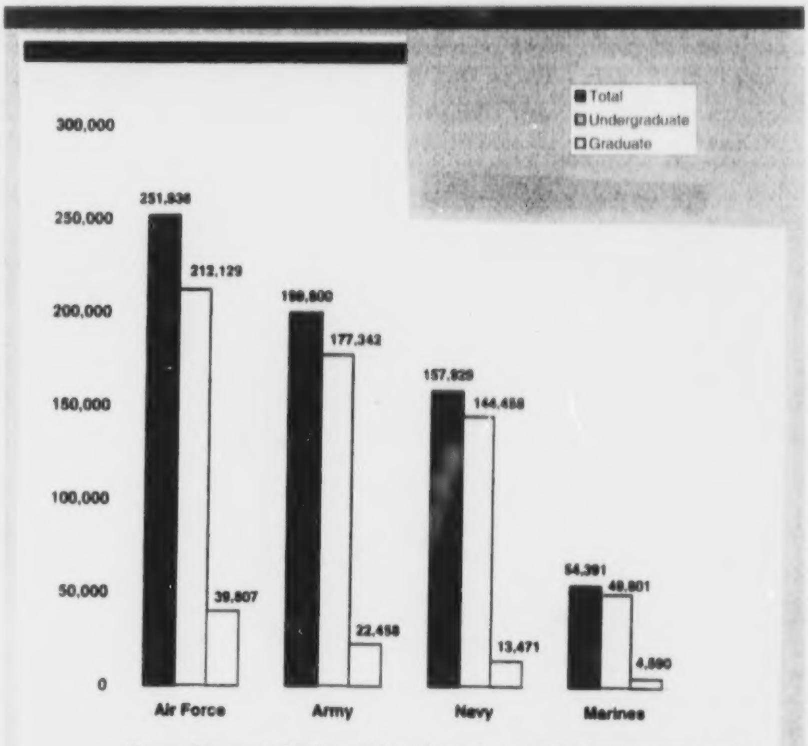
Voluntary education programs enable military personnel to pursue university credentials

Tuition incentives are an important factor for many members of the armed forces, both active duty and reserve, in choosing to pursue higher education credentials. During fiscal year 1998, military personnel accounted for 660,000 enrollments. This figure is up more than 15,000 from 1997 and nearly 35,000 from 1996.

A vast international network supports voluntary continuing education programs for the military. More than 475 installations around the world offer education programs to service members. More than 600 U.S. colleges and universities offer specialized educational programs to military personnel.

The Air Force enrolls more students than any other branch of the military, accounting for over 250,000 enrollments—or 38 percent—of military participation in 1998. The U.S. military has recently become involved in several new education initiatives including the Troops to Teachers program, that provides for stipends to retirees to help pay for teacher certification programs, and distance learning programs that allow enlisted students to maintain a course of study from remote locations. Distance learning also helps enlisted personnel complete coursework if they are transferred.

Military Participation in Voluntary Continuing Education Programs, 1998

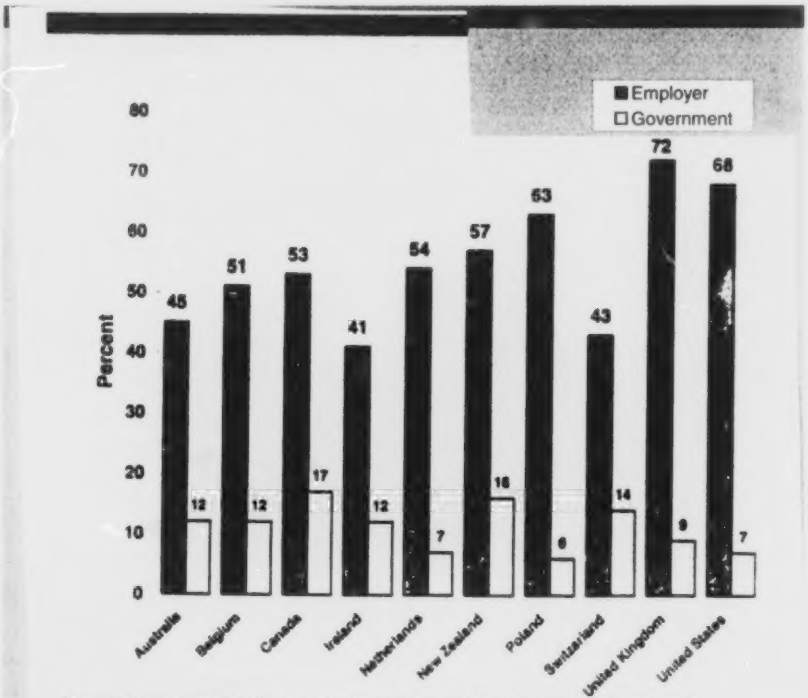


Source: Department of Defense, Defense Activity for Non-Traditional Education Support

Adults rely more on employers than on the government for educational assistance

Employers in the United States rank among the highest in terms of providing at least partial funding for employee education and training. In the United States, 68 percent of students in adult education and training courses received at least partial funding from an employer in 1995. On average, across a sample of industrialized countries, about 55 percent of adult education and training courses are at least partially funded by an employer. However, this benefit is more likely to be provided to men than to women in all countries. On average, 64 percent of adult education courses taken by men receive employer support, compared to 46 percent of courses taken by women. Reflecting this tendency, 27.5 percent of men use personal or family money to pay for adult education and training, whereas 43 percent of women use these resources.

Relative to employer sponsorship and self-financing, government funding of education and training for working adults in the United States is limited. In Canada, 17 percent of adult education and training courses are at least partially funded by the government. The U.S. government is near the bottom in this category, at least partially funding 7 percent of courses.



Source: Organization for Economic Cooperation and Development, *International Adult Literacy Survey*.

Percentage of Adult Education and Training Courses that Received at Least Partial Funding from Employers and Government, by Gender, 1994

CHAPTER 4

Adapting to the Digital Age

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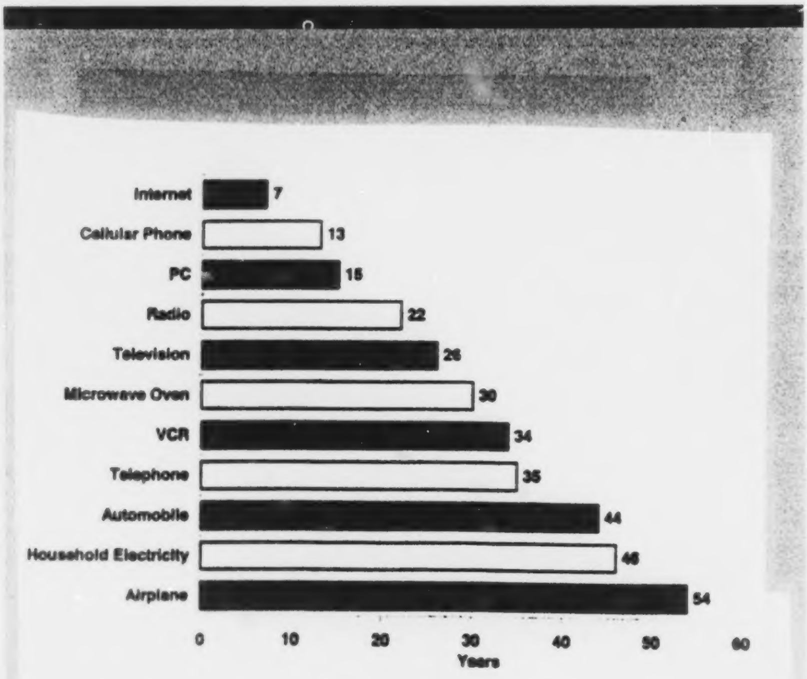
Internet technology has spread at a remarkable rate

Internet technology has spread at a rate no one could have anticipated. In only seven years the Internet has reached 25 percent of the U.S. population. The same degree of penetration took 15 years for the personal computer, 35 years for the telephone and 46 years for household electricity.

In 1970, 5 percent of corporate capital expenditures were for computer and data processing equipment. As computing capabilities have increased at an extraordinary rate, investment in these and related technologies have increased as well. In 1997, nearly half of all corporate capital expenditures were high-tech related. Government funding for primary research in Internet, computing, and networking technology has also been growing.

Rapid technological advancement and continued investment serve to continually increase the speed at which knowledge and information are created and distributed. The implications and opportunities for colleges and universities are many. In particular, institutions must re-evaluate how they deliver content to students, find sources of funding for IT expenses, and compete with private sector education providers with "virtual" campuses.



Years to Attain 25 Percent Market Share

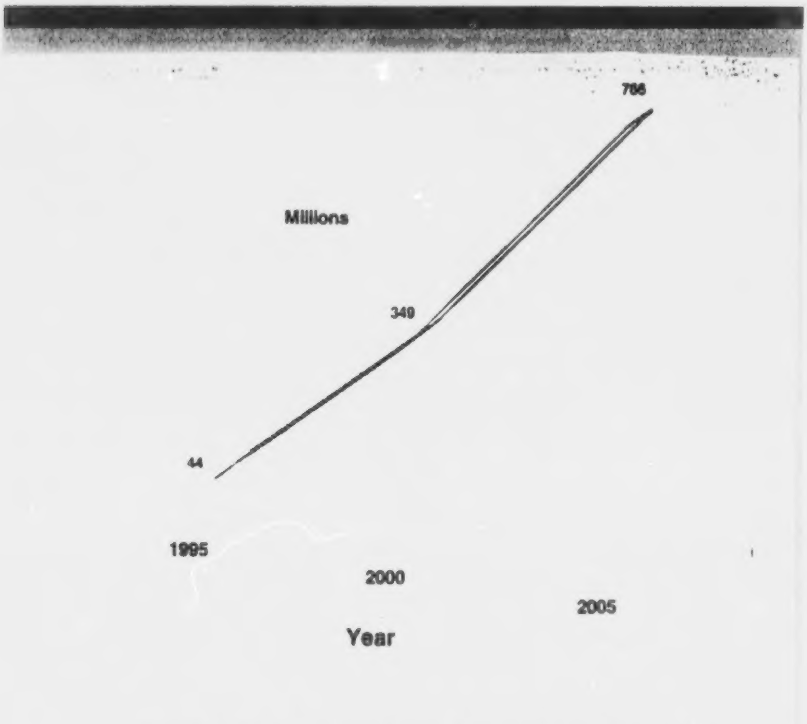
Source: Milken Institute

The Internet will have more than 400 million new users by 2005

Between 1995 and 2000, the number of Internet users worldwide increased seven-fold and that number is projected to more than double again in the next five years. In the United States, 50 percent of the households had PCs in 2000 and over 40 percent of the population was online. The rate of PC penetration in households with children was estimated at 70 percent in 1998. As fast as access to the Internet is spreading, it is not spreading evenly. Nearly 62 percent of those with a college degree use the Internet, compared to just 6.6 percent of those with less than a high school diploma.

In rural areas, those with college degrees are 26 times more likely to have Internet access at home than those with less than a high school diploma.

Fifty-nine percent of those making over $75,000 per year use the Internet while only 16 percent of earners making between $5000 and $10,000 per year use the Internet. Hispanic households are half as likely as white households to own a computer and 2.5 times less likely to use the Internet. African Americans access the Internet less from home, work, school, and the library, combined, than whites do at home. Though all groups are gaining access in absolute terms, demographic gaps in access are widening.



Worldwide Internet Users, 1995, 2000, Projected 2005

Source: U.S. Central Intelligence Agency, Computer Industry Almanac

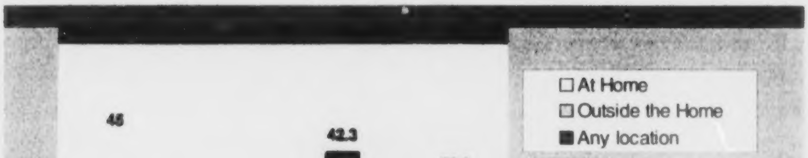
People between the ages of 25 and 45 use the Internet most frequently

Internet use continues to increase across all age groups in the United States, with the highest rate of use among 25 to 34 year olds. People between the ages of 34 and 55 use the Internet only slightly less. In all age groups, people are more likely to access the Internet at home than at work or other places such as a library or a community center.

E-mail remains the number one use of the Internet with 80 percent of home users reporting use for this purpose. But other uses are being reported more frequently as technology advances and more people increase their online comfort level. Sixty percent of home users rely on the Internet for information searches and 54 percent of unemployed persons use the Internet for job searches online.

Educational pursuits are similar for both home users and those using the Internet at some other location. Thirty-six percent of home users access the Internet to take classes online or do school-related research compared to 39 percent of users outside the home.

Percent of Persons Using the Internet by Age and Location, 1998



Source: U.S. Department of Commerce. *Falling Through the Net*. 1999.

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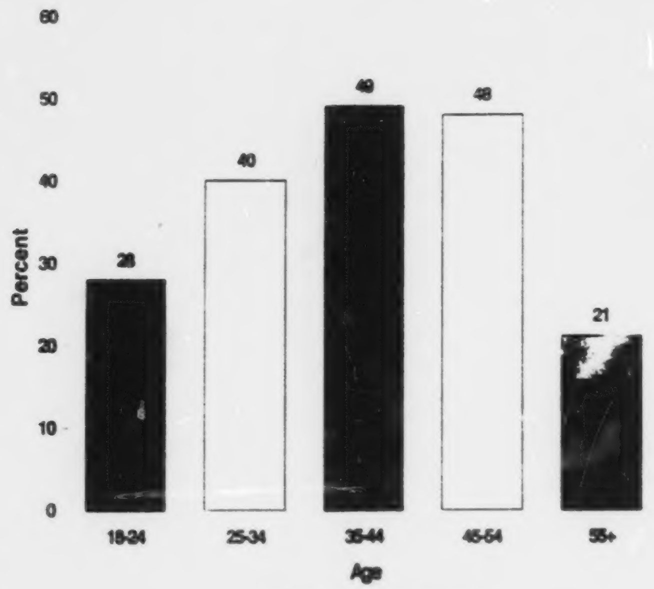
Computer ownership is highest among 35-55 year olds

Computer ownership is highest among households headed by Baby Boomers. Baby Boomers are also most likely to have Internet access at home.

As the Baby Boom generation moves into the 55 and over age bracket, they will bring their computers and high rates of Internet usage with them. And as retirement age remains fairly young, new retirees will have the time and knowledge for several years after retirement to pursue computer-related and online interests.



Source: U.S. Census Bureau

Percent of Households with a Computer at Home, by Age, 1998

More older Americans are using computers and the Internet

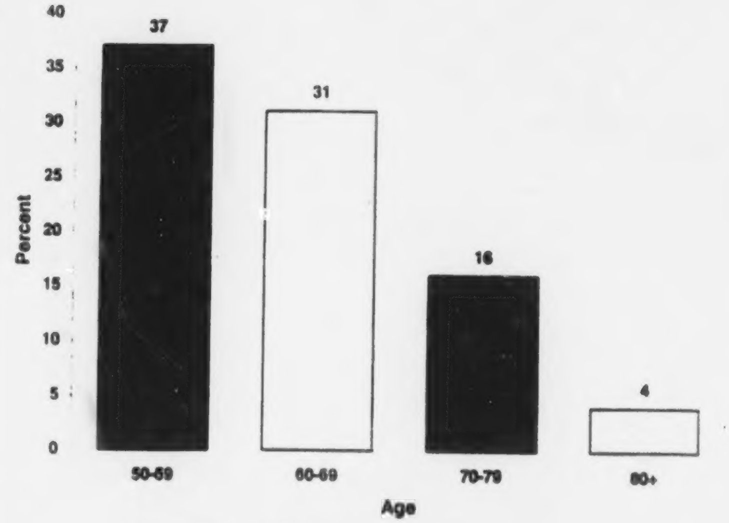
While persons over the age of 55 have been slower to use the Internet and computer technology, they continue to engage in computer-related activities more actively and frequently. Consumer computer buyers over age 55 represented 23 percent of all PC purchases in the fourth quarter of 1998, representing a 150 percent increase over the previous year.

Seniors stating that the Internet is their primary reason for using a computer increased from 13 percent in 1997, to 20 percent in 1998. Internet users age 50 and older reported spending an average of 8.3 hours online per week. This is more than any other age group.

Eighty-two percent of all seniors agree that computer literacy is essential for educational success.

Cost and lack of comfort with the technology are the main reasons seniors who would like to be online are not. Older people will continue to increase their online numbers as the costs of basic computer equipment continues to fall and training programs geared toward the needs of seniors become more widespread.

Percent Owning and Using a Computer by Age, 1998



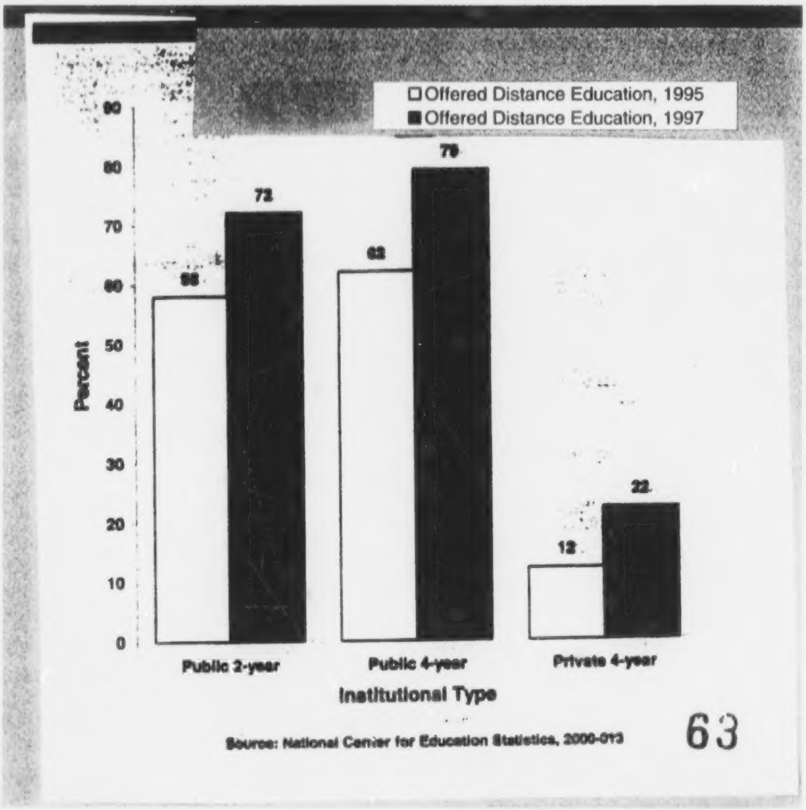
Source: Microsoft, *Seniors and Technology*, 1999.

More institutions are offering online education

Technology-mediated education has spread among American colleges and universities at a rapid pace. Public four-year institutions are leading the way, with 79 percent offering online education in 1997-98.

Online education allows educational content to be delivered to students wherever and whenever they have access to the Internet. This level of flexibility can make it easier for students who are in the workforce, have family responsibilities, reside in remote locations or have mobility impairments, to take classes. Together, these student groups now constitute a majority of postsecondary enrollments.

Online education is viewed as one way to alleviate the "crush" of postsecondary enrollments that will overwhelm many institutions in the next several years. Though not a complete solution, investing in the infrastructure to deliver high quality distance education is more cost- and time-effective than building the necessary classrooms and hiring sufficient faculty resources to meet the coming demand.



Source: National Center for Education Statistics, 2000-013

Percent of Institutions Offering Distance Education by Institutional Type, 1995 and 1997

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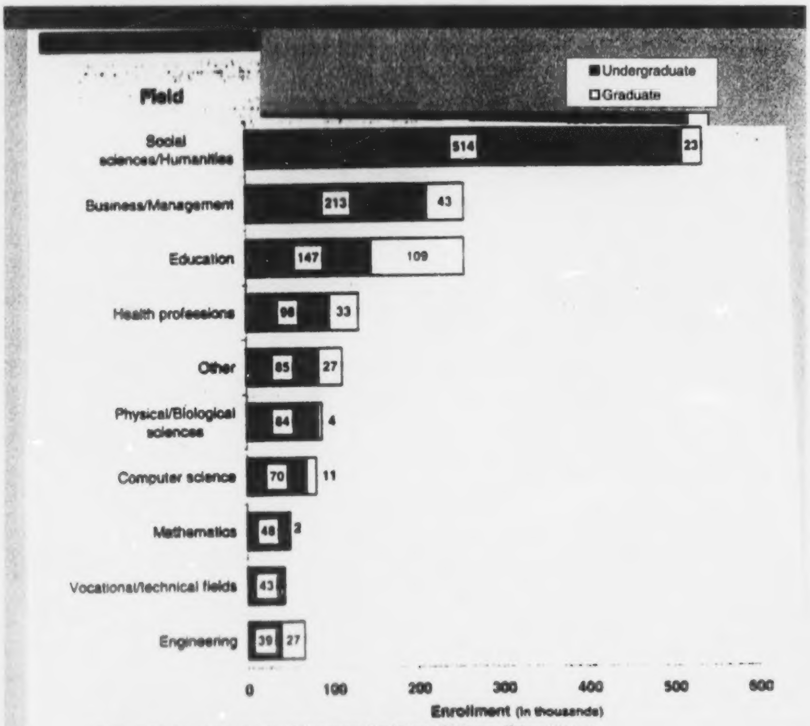
Enrollments in online courses and technology-mediated instruction are growing

Nearly 1.7 million online course enrollments were recorded in 1997-98. Of these, 82 percent were in college-level, credit courses, mostly at the undergraduate level. In 1997-98, 54,470 different online courses were offered, of which 91 percent were college-level credit courses.

Most institutions that offer online education do so on a small scale. About half of the institutions that offered online education courses in 1997-98, offered 15 or fewer different courses, with 23 percent offering fewer than 6 courses.

Undergraduates make up the bulk of online enrollments. The social sciences and humanities accounted for 38 percent of undergraduate distance education enrollments, with business management and education making up another 27 percent. Fifty-five percent of graduate level online enrollments are in education and business management.

Though online education has quickly gained a foothold in American higher education, there are still unresolved issues. What does seem certain is that technology-mediated education is bound to impact accreditation, quality assurance, copyright and intellectual property law, as well as the organizational structure of higher education.



Source: National Center for Education Statistics, *Distance Education at Postsecondary Education Institutions: 1997-98*.

Enrollments in Distance Education by Field of Study, 1997-98

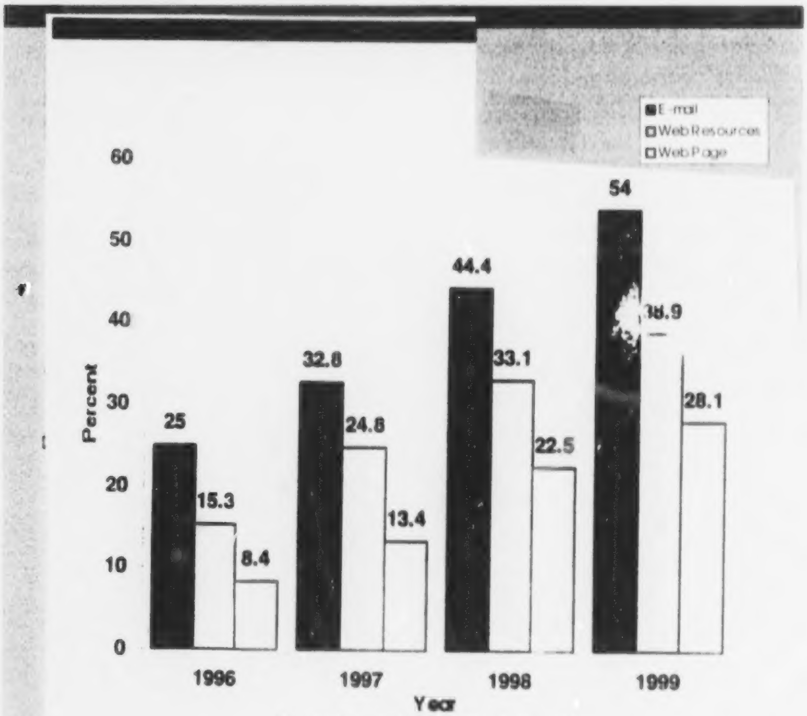
More professors integrate technology with face-to-face teaching

According to the Campus Computing Project's most recent study, helping faculty to "integrate technology into instruction" is the most difficult information technology challenge facing American colleges and universities. Nearly 40 percent of institutions identified this as the most significant IT challenge in 1999, up from 30 percent in 1997.

The next largest challenge reported is to provide adequate user support. Standard user support guidelines for organizations of various sizes recommend one IT support person for every 50 to 75 users. At colleges and universities, there is typically one IT staff person for every 150 to 800 student users.

The third most frequently cited challenge is financing the replacement of aging software and hardware.

Despite these challenges, professors are using technology more and more as a part of instruction. Over half of all college courses now make use of electronic mail, almost 40 percent use web resources, and 28 percent of all college courses have a web page.



Source: Campus Computing Project, 1999

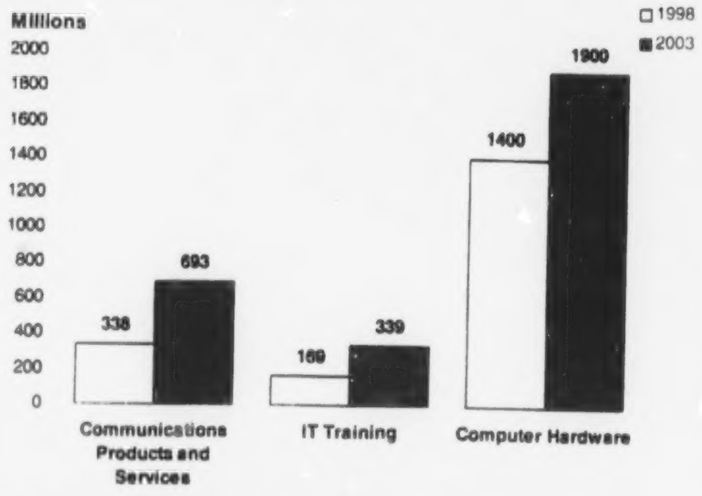
Percent of College Courses Using Various Information Technologies

Higher education spending on IT products and services is increasing by 12 percent per year

As higher education institutions move into the digital age with online courses and attempt to meet student expectations for modern computing facilities, they are forced to spend more money. Concern over the ability to finance these investments ranks high among the IT-related issues faced by institutions of higher education. It is estimated that U.S. higher education institutions spent $3.1 billion on information technology-related products in 1998, and by 2003, their spending will be close to $5 billion.

Computer hardware will be the single largest component of these purchases, rising from $1.4 billion in 1998, to nearly $2 billion in 2003. In the same period, products and service expenditures will rise from $338 million to $693 million, and computer training expenditures will grow from $169 million to $339 million.

U.S. Spending on IT Products and Services, 1998 and 2003

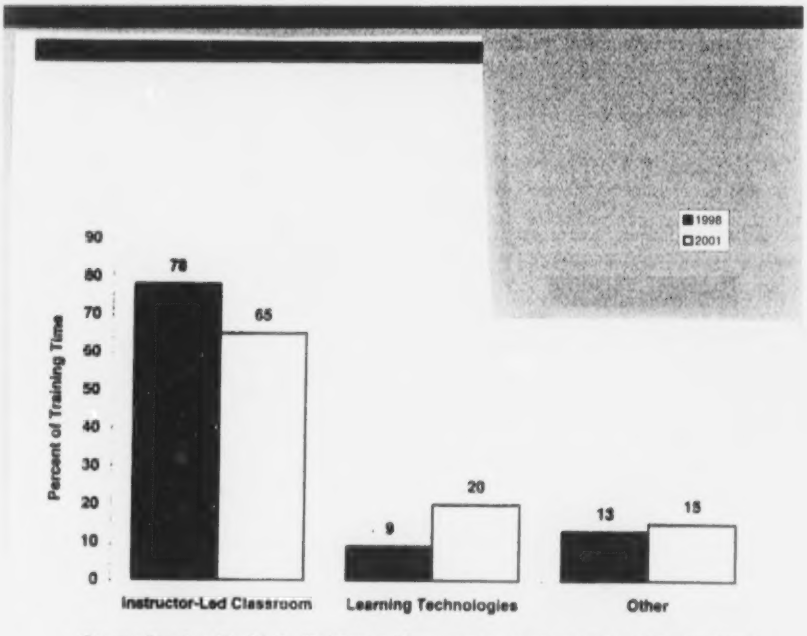


Source: International Data Corporation, *IT Spending Forcast for Higher Education Institutions, 1998-2003.*

Employers are incorporating electronic instruction increasingly in employee training

Employers are beginning to integrate more technology into the training of employees. Though the growth in technology-based training was only about 1 percent from 1997 to 1998, it is expected to grow faster in the future. By industry, the sectors reporting the greatest use of learning technologies to deliver training included non-durables manufacturing (13 percent of training time), trade (12.5 percent), and technology (11 percent). The two industries with the largest predicted growth in the use of learning technologies by 2001, are health care and government.

In 1998, 22.5 percent of organizations used the Internet for distribution of training materials and 61.2 percent are expected to do so in 2001. Twenty percent used the World Wide Web for training in 1998, and 54 percent are expected to do so in 2001. The most common technology used for distributed training is, and is expected to remain, the CD-ROM. Some 56 percent used this technology in 1998, and use by employers is expected to rise to 87 percent in 2001.



Percent Distribution of Training Methods, 1998 and 2001, Projected

Source: American Society for Training and Development, *2000 State of the Industry Report*

Electronic commerce is projected to grow exponentially

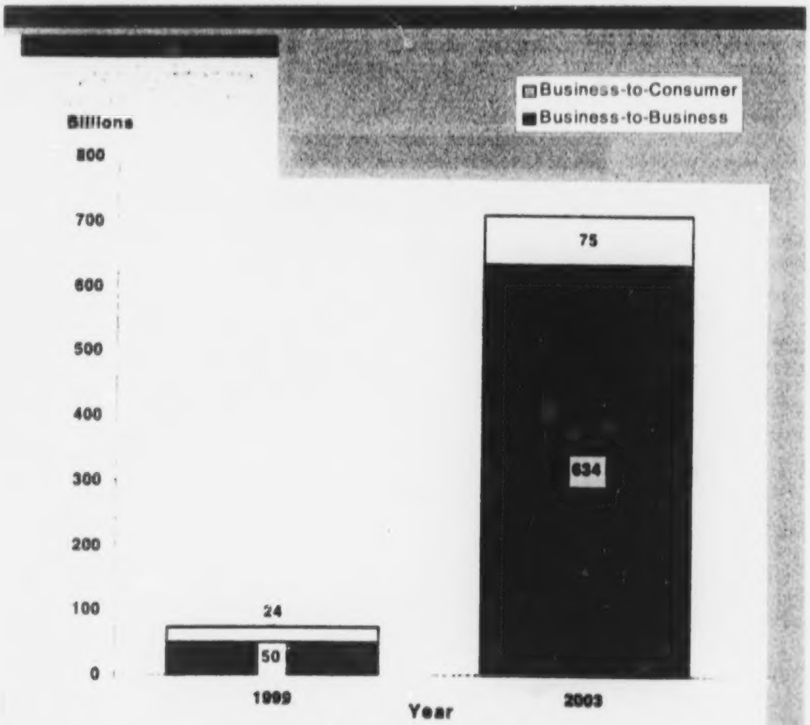
Electronic commerce is changing how the economy works. The rate at which retail and business-to-business purchases are made online will continue to increase, with business-to-business expenditures making up the bulk of e-commerce.

Not only is the volume of goods and services purchased online growing rapidly, but add to this the computers and Internet commerce infrastructure, and the figures become staggering. The International Data Corporation estimates that the Internet economy will surpass $1 trillion in 2001, and reach $2.8 trillion by 2003.

In 1998, there were 6.6 million households banking online. This number is expected to grow to more than 32 million by 2003.

By 2002 the number of Internet access devices will surpass the number of PCs shipped to consumers.

Growth in E-Commerce, 1999 - Projected 2003



Source: International Data Corporation

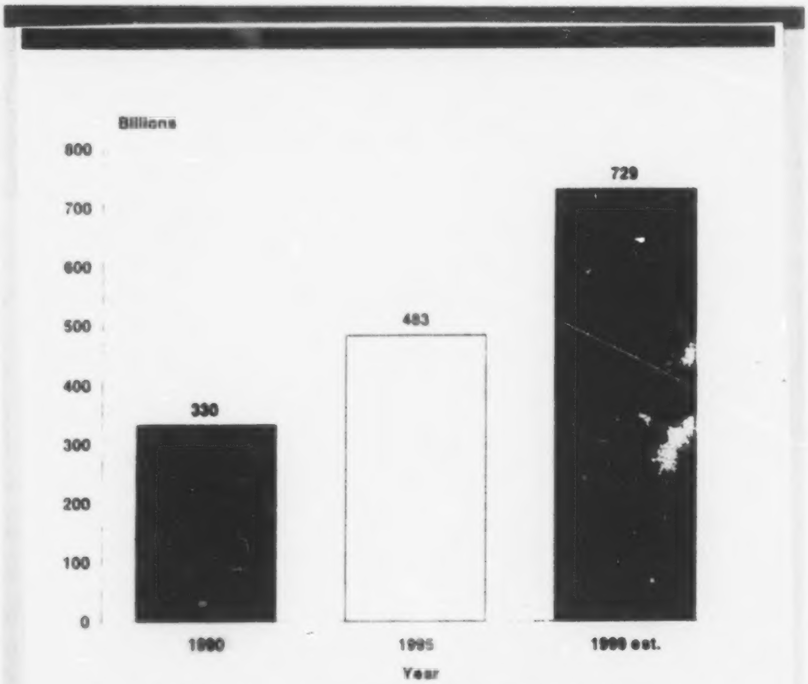
U.S. gross domestic income from IT industries continues to rise

From 1990 to 1999, IT industries' share of the domestic economy has grown from 5.8 percent to 8.2 percent while more than doubling in current dollars. Growing "information consumerism" has made the computer and software industry one of the fastest growing enterprises worldwide. In recent years, the personal computer and the Internet have given individuals the opportunity to access the vast and growing world of online information services. As a result, annual household spending on such services, hardware and software is increasing, both in real dollar terms and as a proportion of total household spending on all goods and services.

In 1992, an average of $4.39 per person was spent for Internet access services in the United States. By 2002, this figure is expected to be nearly $53 per person.

Following demand and their capacity to meet it, higher education institutions are increasingly offering classes online, as well as general information for current and prospective students, library resources, and student support services.

From 1990 to 1999, the domestic computer hardware industry grew 123 percent to $229 billion. During the same period, the computer software and services market grew 234 percent to $200 billion.



Source: U.S. Department of Commerce, *The Emerging Digital Economy II*, June 1999.

Gross Domestic Income from IT Industries, 1990, 1995, 1999 (in billions)

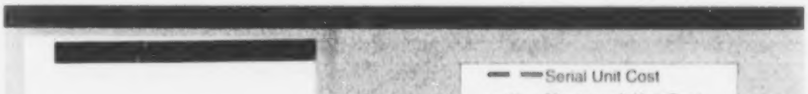
College and university libraries are cooperating to contain costs and keep pace with digital demand

College and university libraries find it increasingly difficult to update print collections as serial and monograph prices continue to rise faster than library budgets. From 1986 to 1998, the average price of a serial subscription rose 155 percent and monograph costs rose 66 percent. During this same period, the average number of serials purchased by college and university libraries declined by 7 percent, and monograph purchases declined by 25 percent.

As the Internet evolves, libraries face special challenges. If budgets do not keep pace with the price of print publications and more information becomes available online, the choice between allocating scarce resources to print publications or updating library computing facilities and making more material available online must be revisited. Both libraries and museums have begun to make more content available online.

Increasingly, libraries are engaging in cooperative ventures to facilitate sharing the costs of acquiring and maintaining digital collections. Also, the growth in online education is necessitating that libraries enhance their capacity to deliver resources to students electronically.

College and University Costs and Acquisitions, Percent Change from 1986



Source: Association of Research Libraries, 1999.

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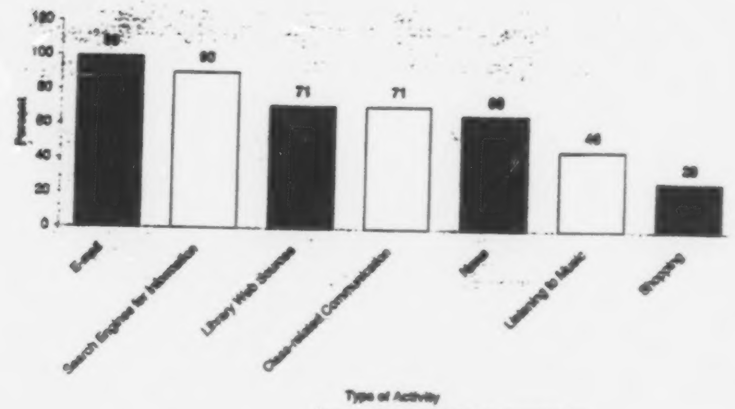
Students are using the Internet increasingly for research

Students are doing more research online and using the Internet for education related activities. As more information becomes available online, the amount of educational "work" students do using the Internet will grow.

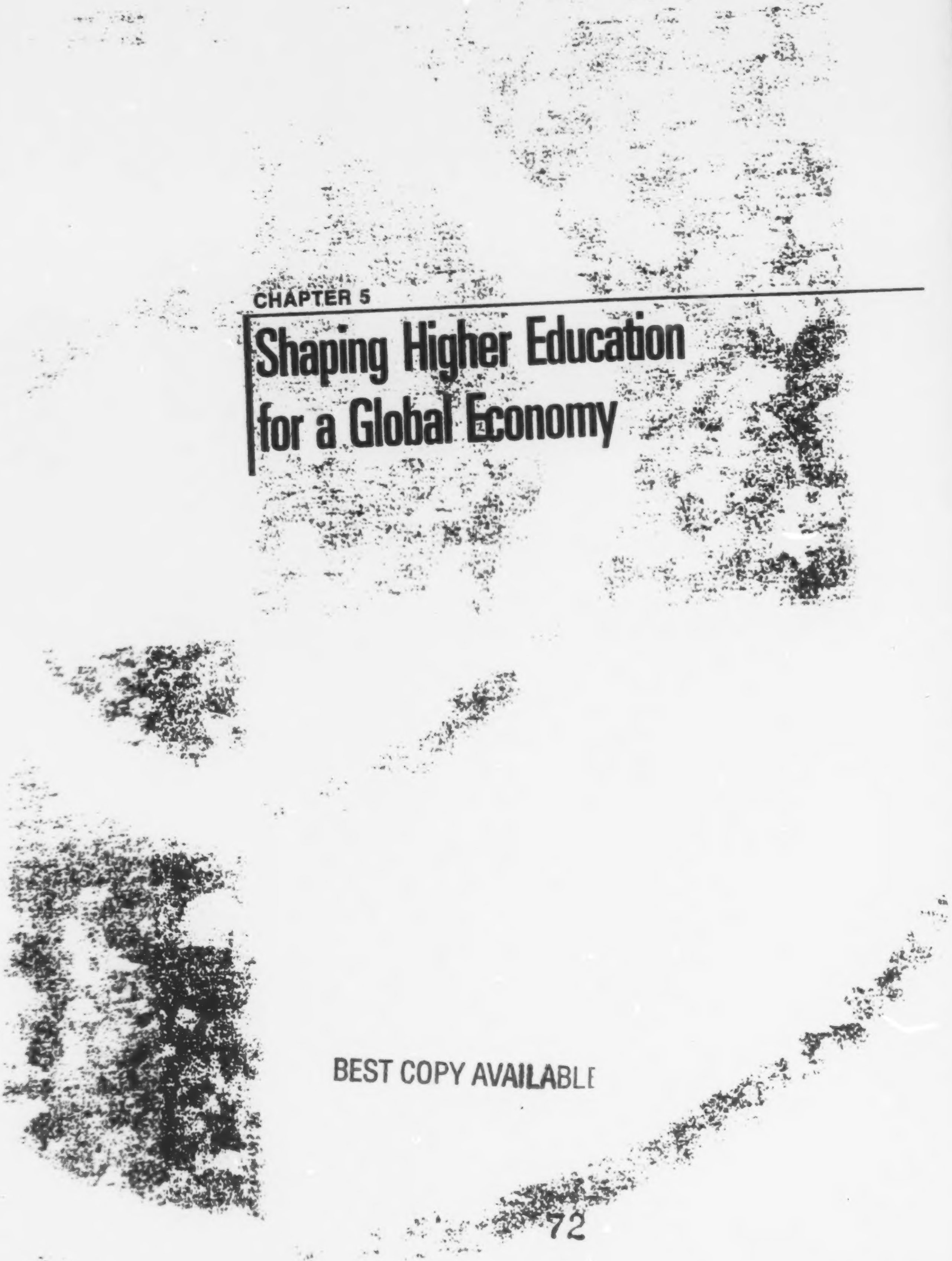
How traditional libraries and Internet technology will integrate in the future is an open question. In surveys, students have suggested that college and university libraries expand access to their own holdings online as well as provide links to resources outside the library. Students also recommend that the library be a place where students can come to learn about online resources and how to use them efficiently. Students also want more and better computer hardware in library facilities.

It is clear that the Internet holds a prominent place in students' lives. They use it for entertainment, communication, commerce and learning. It has been recommended that, in order to better enable the Internet as a tool for learning, libraries should double or triple the percent of their budget devoted to technology-related expenditures.



Source: John Lubans, Duke University 2000.

Percent of Students Frequently or Occasionally Using the Internet for Selected Activities



CHAPTER 5

Shaping Higher Education for a Global Economy

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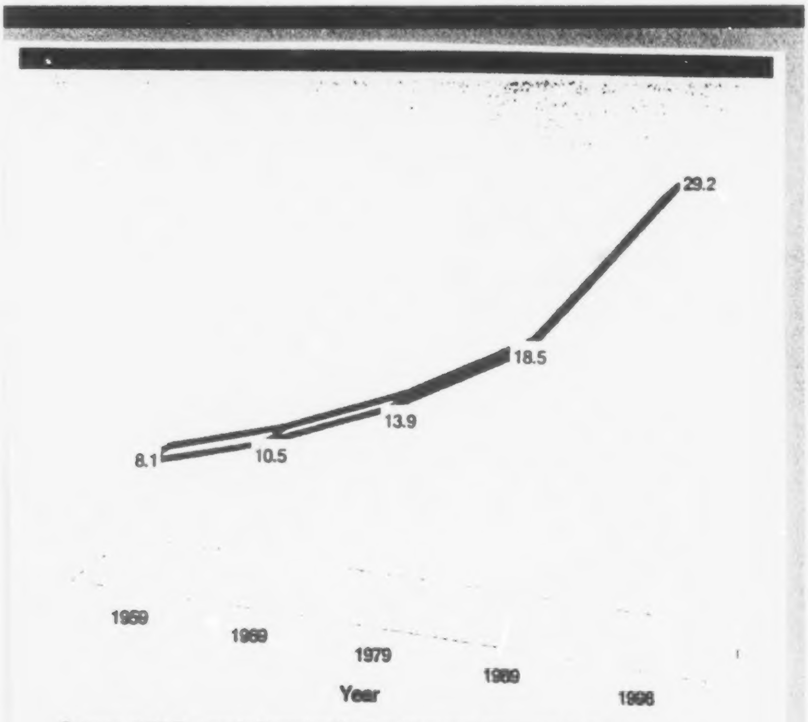
The global economy is becoming more integrated

In 1987, trade as a share of world GDP stood at 20.6 percent. By 1997 it had grown to 29.6 percent. A similar pattern is found in the U.S. domestic economy where trade as a percent of GDP grew from 18.5 percent in 1989 to 29.2 percent in 1998.

Over half of the world's largest corporations were located in the United States in the early 1970s. Today, less than one-third are based in the United States. In 1950, 40 percent of worldwide economic output was generated in the United States. By 1997, the United States' share of global output had fallen to 21 percent.

Thus, by any measure, the global economy is becoming more integrated. The fortunes of national economies are linked such that an economic boom in one economy can stimulate the economy of its trading partners by purchasing more of its exports. The reverse is also true in that an economic downturn in one country can have adverse effects in others.

Trade as a Percent of U.S. GDP, 1959-1998

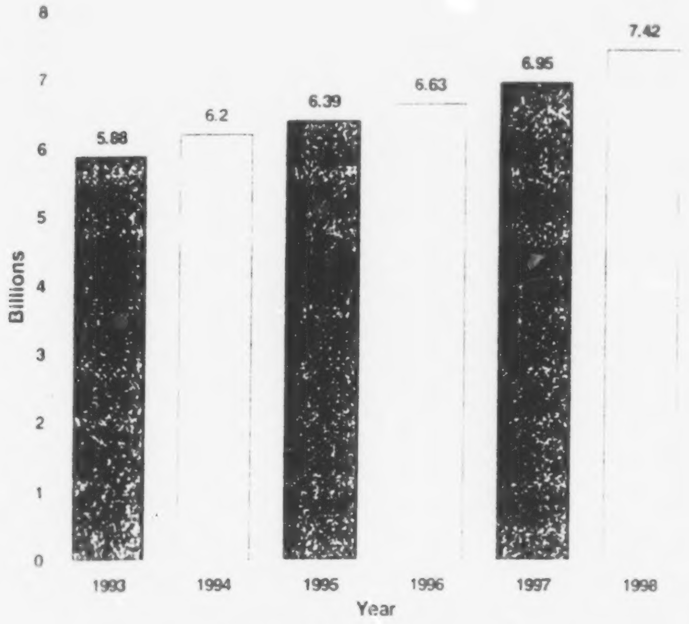


Source: *1999 Economic Report of the President* and *Economic Indicators*

The United States has a rising trade surplus in educational services

Despite an overall trade deficit, the United States consistently runs a trade surplus in education services. This is testament to the quality and competitiveness of U.S. educational institutions. Education is the fifth largest service sector export.

International students make up 3 percent of the total U.S. higher education population, and contribute more than $13 billion to the U.S. economy in tuition, living expenses and related expenditures. Over 75 percent of all foreign student funding comes from personal and family sources or other sources outside of the United States.



Source: U.S Department of Commerce

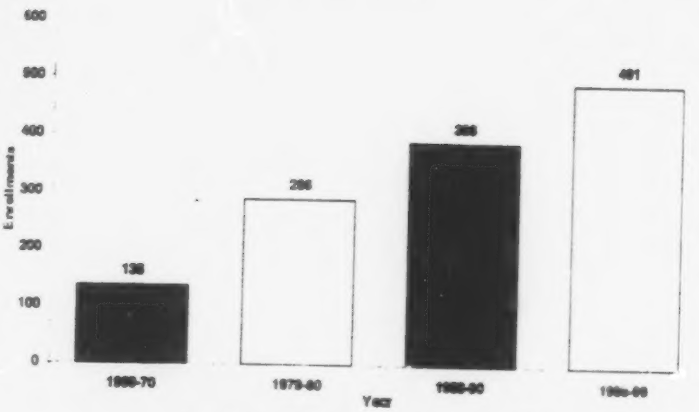
U.S. Trade Surplus in Educational Services, in Billions of Dollars, 1993-97

International enrollments at U.S. institutions are growing steadily

Total international enrollments at U.S. colleges and universities have risen nearly 9 percent since 1969 and by 1999 stood at about one-half million. Reflecting the immigrant, minority and poorer populations, international students are concentrated in and around a relatively few large U.S. cities. Over 22 percent of all international students are enrolled in just 10 U.S. counties. New York and Los Angeles alone account for roughly 9 percent with over 22,000 international enrollments, each. Twenty-one percent of all international enrollments are within 50 miles of Manhattan, Boston and Los Angeles.

Eighty-one percent of responding institutional representatives from U.S. colleges and universities with large numbers of international students believe the most significant potential for growth in international enrollments is in the field of business. More students may seek U.S. business education as employment opportunities in international trade and commerce continue to grow. However, 56 percent think this potential will not be realized because the United States lacks a national response to this opportunity and U.S. institutions have failed to advertise adequately internationally. This and increased competition from the United Kingdom and Australia, may lead to a decline in the number of international students—particularly from Asia— who choose to study in the United States.

International Student Enrollment at U.S. Institutions, 1969-1999 (in thousands)



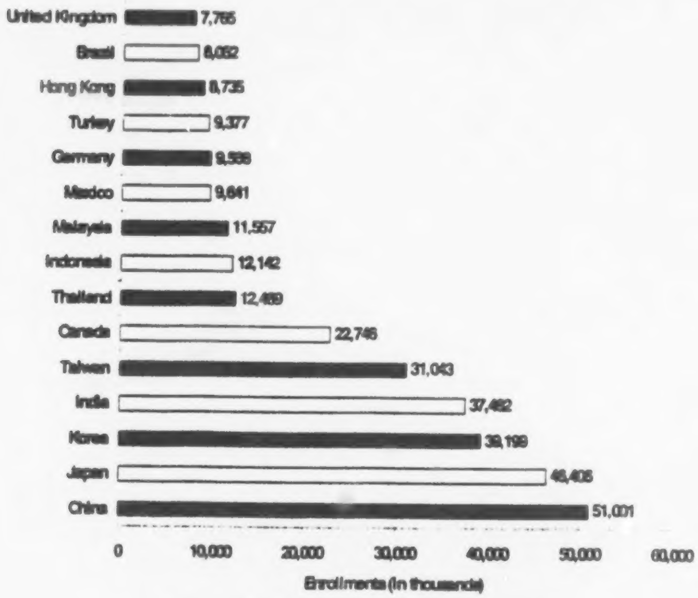
Source: Institute for International Education, *Open Doors*

Asia sends the most students to study in the United States

Asian students accounted for 56 percent of the 490,933 international students studying in the United States during the 1998-99 academic year. China sent the most students, whereas Japan had sent the most in 1997. Asia continues to provide the majority of international enrollments despite single-year enrollment declines from 1997 to 1998, ranging from 8.6 percent to 20.8 percent from Korea, Indonesia, Hong Kong, Thailand and Malaysia. Japanese student enrollments fell 1.4 percent while enrollments from China increased 10.4 percent between 1997 and 1998.

The Asian financial crisis is largely blamed for the declines from Asia as well as the 28 percent drop in Asian enrollments in Intensive English Programs between 1997 and 1998.

Forty-nine percent of international students from Asia are in graduate programs. Eighty-one percent of Chinese students in the United States are graduate students. India ranks second, with 71 percent of its U.S. enrollments in graduate programs.



Source: Institute for International Education, *Open Doors*

International Students
Studying in the U.S.
by Country of Origin, 1998-99

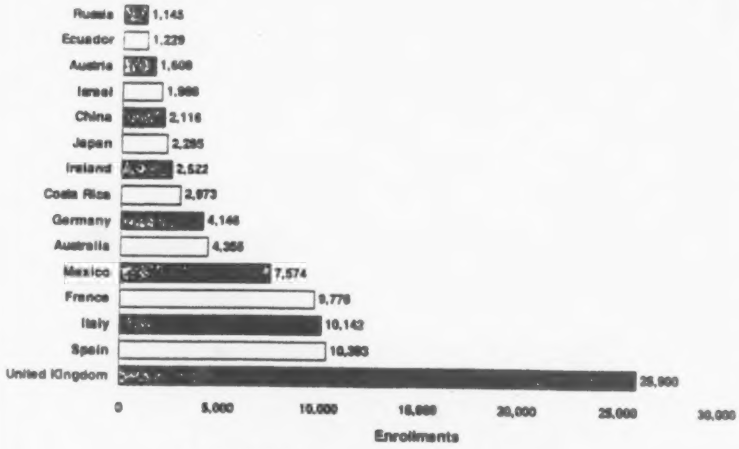
Most U.S. undergraduates who study abroad do so in Europe

In 1998, the number of U.S. students receiving credit for study abroad increased 15 percent over the previous year to a record 113,959 students. Growth has been strong for the past decade, but the number of students studying abroad is still estimated at less than 10 percent. The economy is globalizing much faster than the practice of higher education.

Though Europe is the top choice for U.S study abroad students, it is not as dominant as it once was. Eighty percent of study abroad students went to Europe in 1985-86 and only 60 percent did so in 1997-98. All other regions have gained market share with respect to U.S students.

Thirty-five percent of U.S. students abroad studied the social sciences and humanities and 16 percent studied business and management. All other fields of study were individually pursued by less than 10 percent of the students.

Leading Study Abroad Destinations for U.S. Students, 1997-98



Source: Institute for International Education, *Open Doors*

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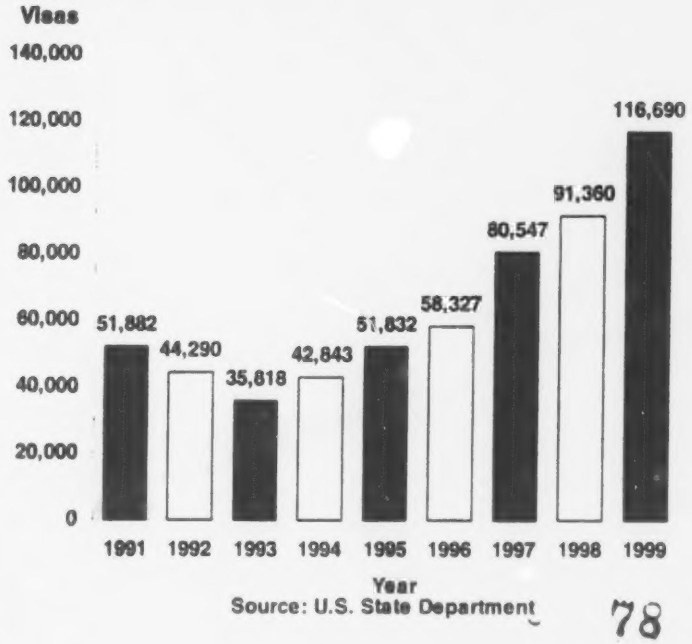
An IT labor shortage is contributing to the demand to admit more skilled nonimmigrant workers

Efforts are being made to reduce the shortage of qualified IT workers through changes in nonimmigrant worker visas. Skilled foreigners can live and work in the United States for up to six years with an H-1B temporary work visa. Congress raised the number of these visas from 65,000 per year in 1998 to 115,000 in 1999 and 2000. Meanwhile, Congress is being pressed to raise the H-1B caps still further.

Allowing more foreign high-tech professionals into the United States is likely to increase the proportion of workers from Asia. Still, Mexico is by far the leading sender of immigrants to the United States, accounting for 20 percent in 1998. The second-largest country of origin in 1998 was China, sending 5.6 percent. Two-thirds of U.S. immigrants were admitted from 20 countries in 1998.

During 1998, 660,500 immigrants entered the United States legally. This represents a 17 percent drop from 1997 and 27 percent less than 1996. Immigration due to employment-based preferences has followed a similar pattern, accounting for between 11 percent and 13 percent of total immigration since 1995. The number of immigrants admitted under employment-based preferences is likely to rise as Congress considers a number of plans to admit more high-tech workers in order to ease the labor shortage in this field.



Source: U.S. State Department

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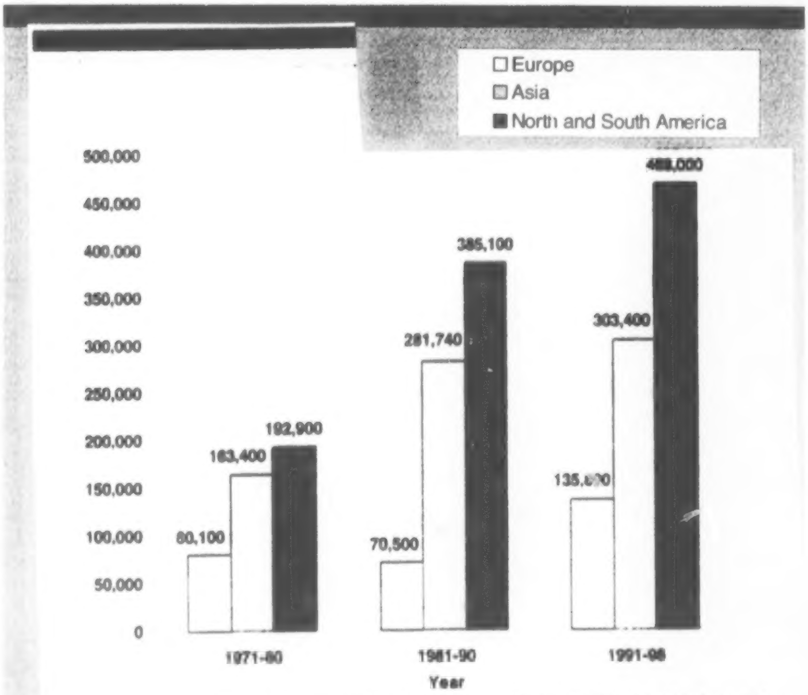
H-1B Non-Immigrant Worker Visas Issued, Including Renewals, 1991-1999

Asian and Latin American immigration to the United States is growing much faster than European

After more than 100 years of predominantly European immigration to the United States, the past 30 years have seen a remarkable growth of Asian and Latin American immigration. During the 1970s, the average number of Asian and Latin American immigrants admitted to the United States per year was 356,300. By the end of the 1990s, the average had more than doubled to 771,400 immigrants per year from Asia and Latin America.

A growing and changing immigrant population offers opportunities to colleges and universities. In particular, it can be anticipated that there will be increasing demand for English as a Second Language (ESL) programs for individuals as well as prospective ESL teachers.

Average Immigrants Admitted to the United States, Per Year by Decade and Region of Origin, 1971-1998



Source: U.S. Immigration and Naturalization Service, *Statistical Yearbook*, annual

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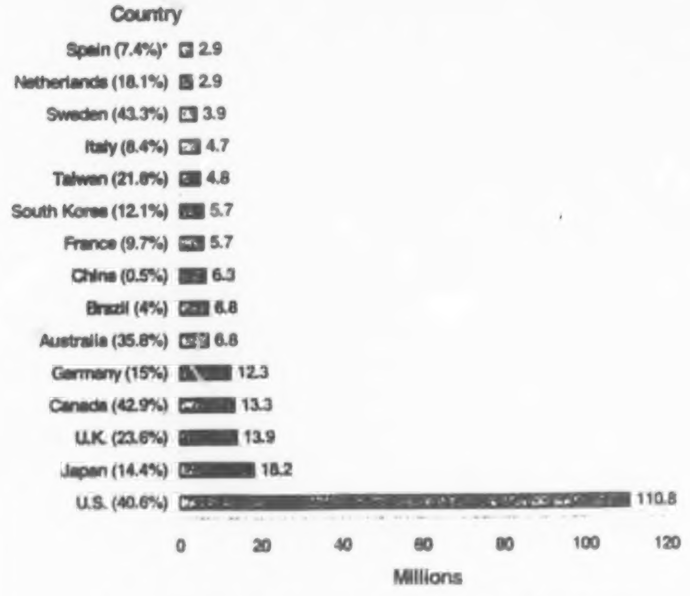
The United States has the largest online population

Though the United States has by far the largest online population, other regions are beginning to catch up. The combined U.S. and Canadian share of world Internet users is expected to decline, in relative terms, from 43 percent in 2000 to 30 percent in 2003. Though North American countries will continue to add Internet users, the online population will grow faster in all other regions, increasing their relative share of worldwide Internet users. From 1999 to 2003, Internet users in the Asia-Pacific region are projected to climb 227 percent to 114 million, while Latin American users are projected to grow 259 percent to 14 million.

As Internet usage has spread in the United States, the education community has responded by making more courses available online. As the Internet takes hold in other parts of the world, potentially tens of millions of people worldwide can be expected to want to participate in Internet-based distance learning.



Source: U.S. Central Intelligence Agency, Computer Industry Almanac

Online Population, 1999
(in millions)

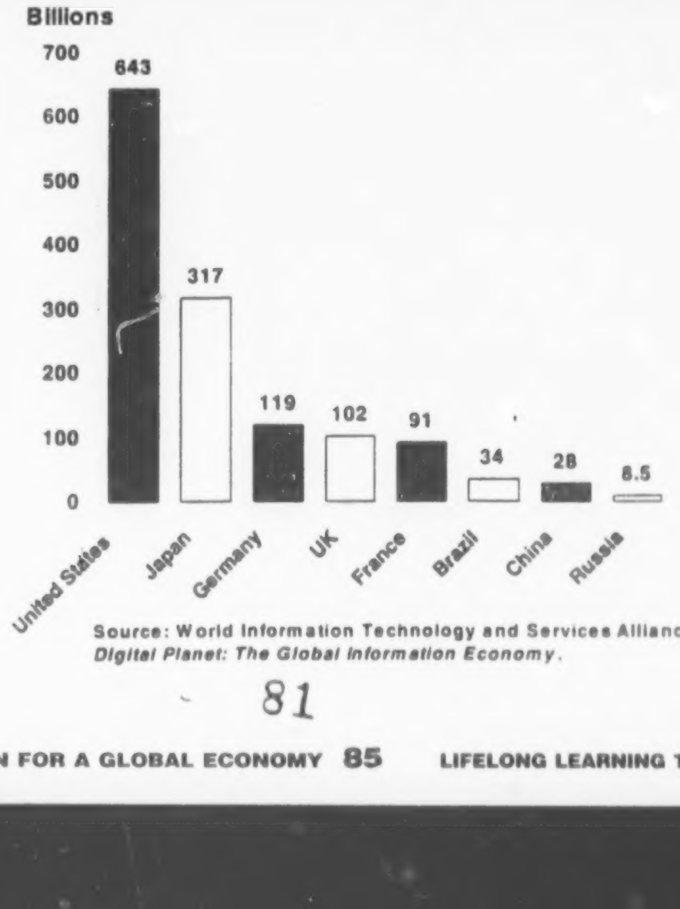
The United States and Japan invest the most in IT

The first comprehensive study of the global information technology economy estimated the value of the industry in the United States at $1.7 trillion in 1997, with growth 27 percent faster than global GDP.

The United States and Japan together accounted for 53 percent of the global IT market. But other nations and regions are expected to gain ground. Reflecting growth in Internet use, Asia-Pacific (excluding Japan) and Latin America are increasing their IT spending respectively by 14.5 percent and 13.6 percent annually. Western Europe was the slowest growing market in 1997, at 3.5 percent.

Though Russia represents an enormous potential market for educational services and consumer goods, it appears likely that Russia will not be able to match the European nations' IT spending levels for some years to come. In 1997, Russia spent only two-thirds as much on information technology as Hong Kong and roughly 15 percent less on telecommunications than Greece.

Information Technology Spending by Country, 1997 (in billions)



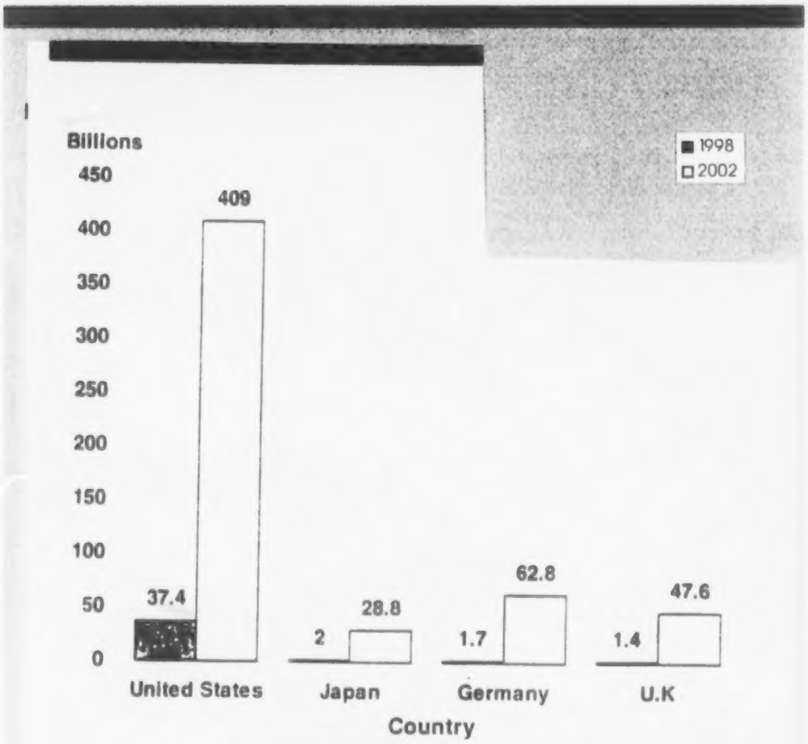
Source: World Information Technology and Services Alliance, *Digital Planet: The Global Information Economy.*

In the short term, the United States will continue to lead in e-commerce

In 1999, the United States accounted for 63 percent of global business-to-business e-commerce and 77 percent of business-to-consumer e-commerce. By 2003, the global e-commerce market is expected to grow by more than 1000 percent to $1.3 trillion. The U.S. share of these market segments is expected to fall to 56 percent in business-to-business and 42 percent in the business-to-consumer market.

This trend can be expected to continue as IT investments worldwide begin to resemble the U.S. pattern of investment. The United States spent the majority of its IT-related investment on the technology of the basic Internet infrastructure. But in 1999, more than half of IT-related investment will be devoted to the non-technology functions of marketing, sales and content development. As other countries more fully develop their national Internet infrastructure, they will likely follow a similar path and begin to compete more effectively in the global e-commerce market.

In the short term, U.S. companies have an advantage in international markets because they have more quickly developed adequate marketing, content development, and delivery functions to provide services to Internet users abroad.



Source: International Data Corporation

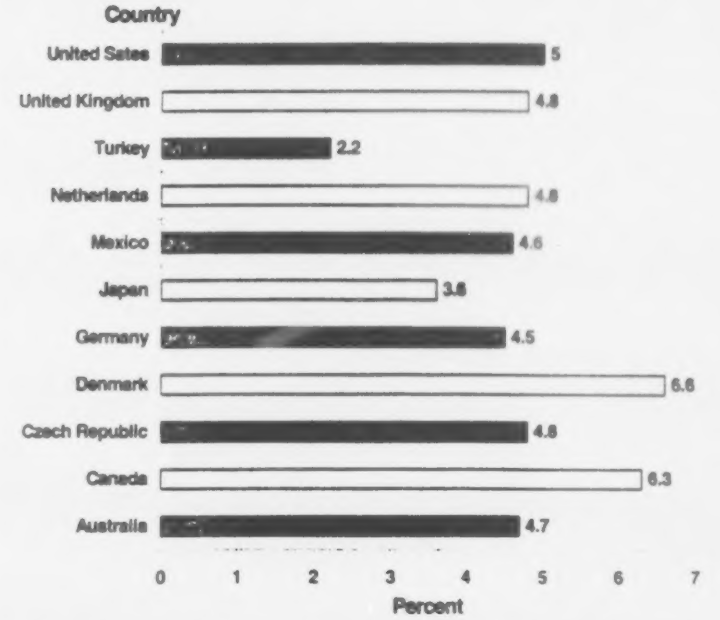
E-Commerce in Four Countries, 1998 and 2002 Projected (in billions)

The U.S. investment in education is comparable to that of other industrialized nations

The U.S. investment in education at all levels ranks only slightly better than average for most developed countries. When viewed as a percentage of gross domestic product, U.S. public investment in education was 5 percent in 1995. On average only $0.50 out of every dollar is spent in the classroom in U.S. elementary and secondary schools.

Despite modest investments in education, the United States continues to be the most powerful player in the global economy. But other countries are quickly gaining ground. With the nation's labor force projected to grow more slowly during the coming decade, investments in education and training will be especially critical to ensuring that the United States remains able to compete effectively in global markets.

Public Expenditures for Education as a Percent of GDP, 1995



Source: Organization for Economic Cooperation and Development, Education Database.

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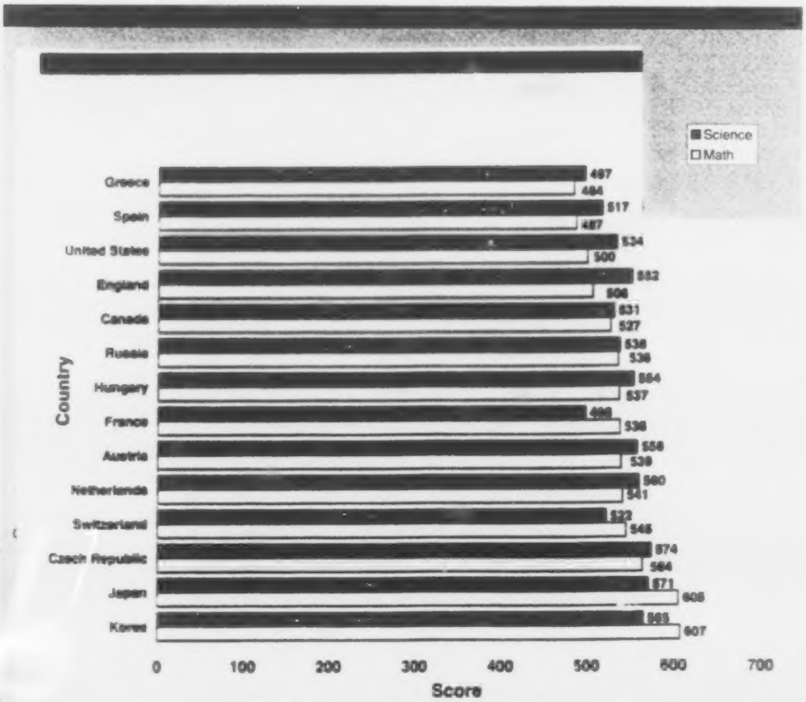
American children lag behind their peers in math and science literacy

Recent reports have highlighted the low levels of math and science literacy among American school children. Compared to their peers in other developed countries, U.S. high school students were revealed to have only limited knowledge of basic math and science. One consequence is that very few U.S. college students opt to study math and science. This is cause for concern, because a shortage of talent could impede the United States' future research capacity and ability to exploit emerging technologies.

Among the national education goals adopted in 1990 is one that calls for American school children to be first in the world in mathematics and science by the year 2000. The intent of this goal was to motivate and encourage students to pursue science and mathematics education, and to emphasize the importance of such disciplines in school curricula nationally. While American students continue to lag significantly in math achievement, they are showing improvement in scientific achievement. American eighth graders' mean science achievement scores now surpass those of their counterparts in some developed nations.



Source: Organization for Economic Cooperation and Development. *Education at a Glance* database, 1999.

Mean Science and Math Scores for Eighth Graders by Selected Countries: 1995

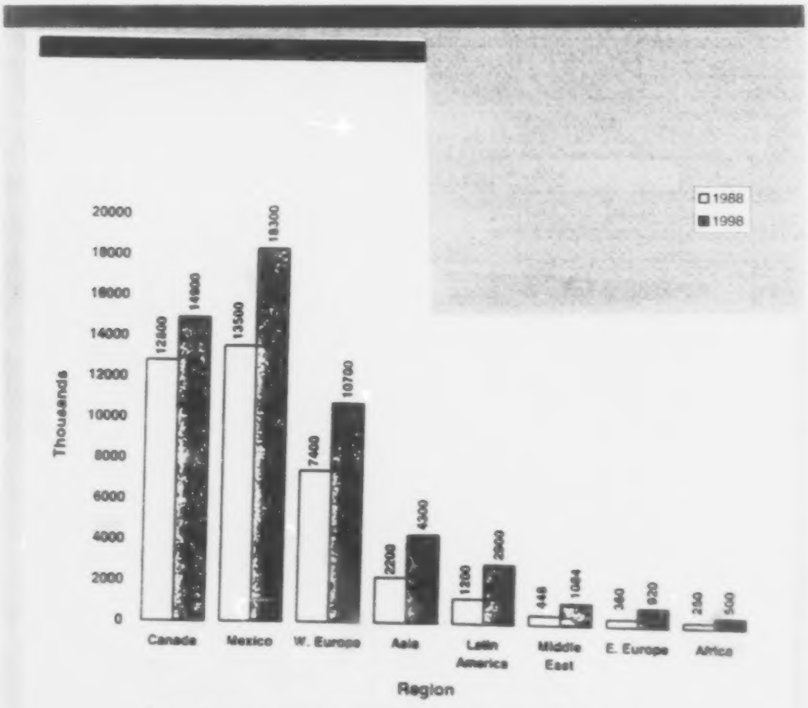
More Americans are traveling abroad for business and recreation

Nearly 16 million more Americans traveled abroad in 1998 than in 1988, representing a 38 percent increase in 10 years. America's North American Free Trade Agreement (NAFTA) partners attracted the most visitors with nearly 15 million U.S. citizens visiting Canada and over 18 million visiting Mexico in 1998.

Though collectively accounting for only 18 percent of U.S. travel abroad in 1998, total travel to Asia, Latin America, the Middle East, eastern Europe and Africa increased by 118 percent between 1988 and 1998.

As the economy continues to globalize, international travel will increase. Emerging markets attract investment, and international experience is increasingly desired in the business world. Many MBA and other professional programs now incorporate some international component as a required part of the curriculum. Active partnerships between U.S. and foreign institutions facilitate this type of exchange.

U.S. Travel to Foreign Countries, 1988 and 1998



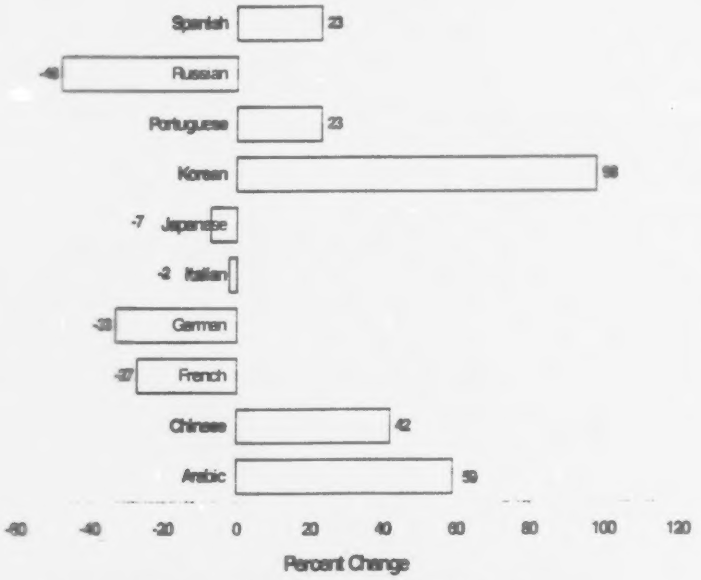
Source: Tourism Industries, International Trade Administration, 1999.

An increased demand for bilingual workers influences foreign language enrollments

Patterns of foreign travel, emerging markets and foreign language enrollments tend to be correlated. Companies recognize that their ability to compete effectively in both national and international markets necessitates the hiring of employees who can speak more than one language.

Latin America and Asia—especially China—are seen as the largest emerging markets for U.S. trade. This partly explains the growth of enrollments in Spanish, Portuguese, Chinese and Korean language courses. Meanwhile, enrollments in several European languages have fallen significantly in the 1990s. The decline in European language enrollments reflects two trends with respect to business. First, though there is plenty of room in Europe for investment and growth, the growth potential is ultimately smaller, and the domestic competitors are more numerous and better financed. Second, potential partners for U.S. ventures in Europe are likely to be proficient in English.

In the case of Russia, its diminished role as a global superpower and increasingly risky investment climate likely have contributed to declining enrollments.



Source: Modern Language Association, 1998 and Association of Departments of Foreign Languages, 2000.

Percent Change in Foreign Language Enrollments by Language, 1990-1998

CHAPTER 6

Promoting Civil Society and the Arts

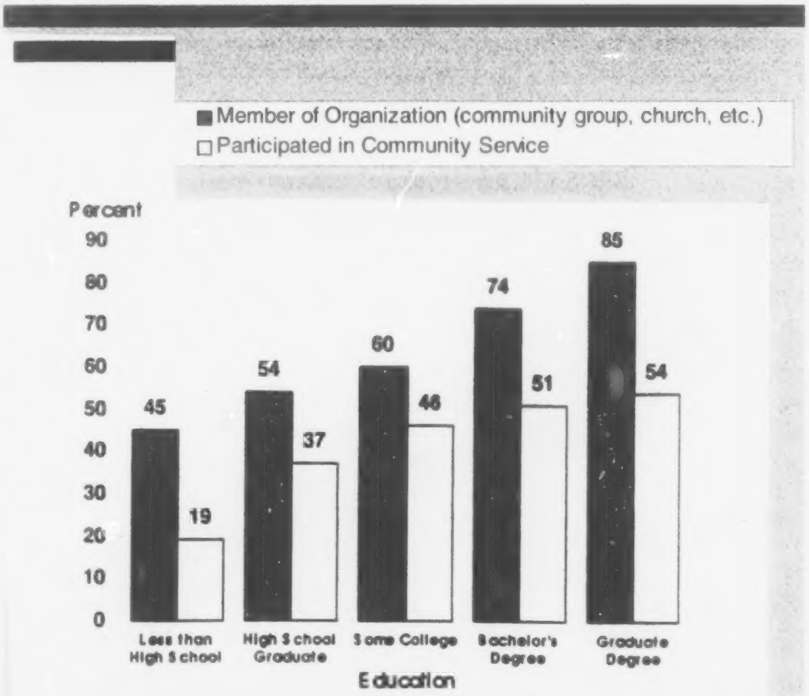
People with higher levels of educational attainment participate more in community and political affairs

Participation in civic activities correlates consistently with level of educational attainment. The more education an individual has, the more involved that person is likely to be in community activities.

There is much to suggest that a community is better off if the people who live in it are involved in the community and informed about its affairs. Citizens who participate are more likely to be informed about the public issues that impact their own well-being as well as those around them. They are also more likely to participate in the public debates that ultimately determine public policy.

Participation in community life can take many forms including involvement in local government, volunteer organizations, sport and hobby clubs, churches and synagogues. These groups can enrich community life and create ties between people. Interaction in groups, in almost any context, contributes to better understanding of the needs and perspectives of others.

Percent Participating in Selected Activities, by Educational Attainment



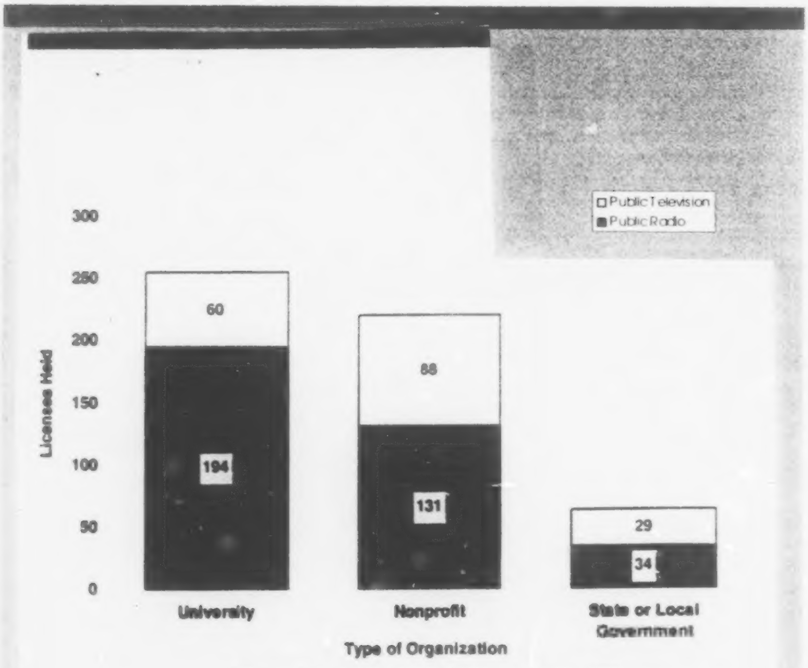
National Center for Education Statistics, *National Household Education Survey*, 1996

Universities' public radio and television stations provide important public services

Colleges and universities across the country maintain public radio and television stations that provide quality cultural and educational programming. In some regions of the country, university-operated public radio stations are the only source of jazz and classical music programming. Often, university radio stations provide Hispanic and Native American populations an opportunity to broadcast in their own languages. Above all, university public radio stations are extremely important sources of regional news and public affairs commentary in many areas of the country where local newspapers are having difficulty surviving.

One-third of all public television station licenses are held by colleges and universities. These stations are vital links in university educational telecommunications networks and provide college-level telecourses, K-12 classroom services, and workforce training to people in the regions surrounding the university.

Colleges and universities hold 55 percent of the nation's public radio licenses. In some states, such as Michigan and Iowa, colleges and universities hold nearly all public radio licenses.



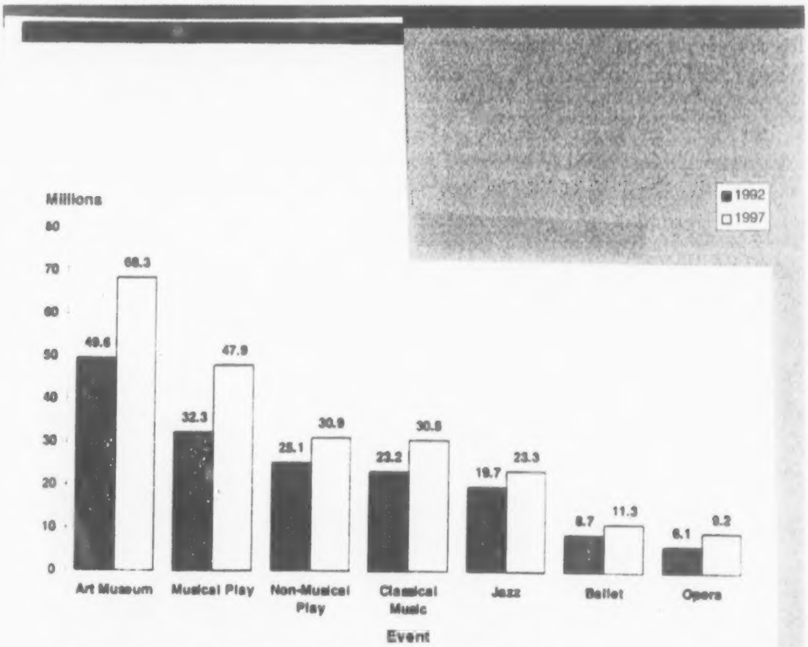
Source: Corporation for Public Broadcasting, 1999.

Public Radio and Television Licenses Held, by Type of Organization, 1999

Attendance at arts events is on the rise

In 1997, half of the U.S. adult population, 97 million people, attended at least one of seven arts activities —jazz, musical plays, non-musical plays, classical music, art museums, or ballet. Visiting art museums was the most popular activity, with 34.9 percent of adults visiting a museum at least once.

There is a solid connection between educational attainment and arts attendance. Adults who attended graduate school had the highest attendance rates for every arts activity; those who completed only grade school had the lowest rate for every event. But the numerically largest group in all categories is those who have completed some college. This reflects the rising level of educational attainment in society at large. In 1997, 50.3 million people had attended some college, up from 39.2 million in 1992. Attendance among individuals who had completed some high school grew between 1992 and 1997, especially for musical plays where they accounted for 7.1 percent of attendees in 1997.



Total Adult Attenders of Arts Events, 1992 and 1997, (in millions)

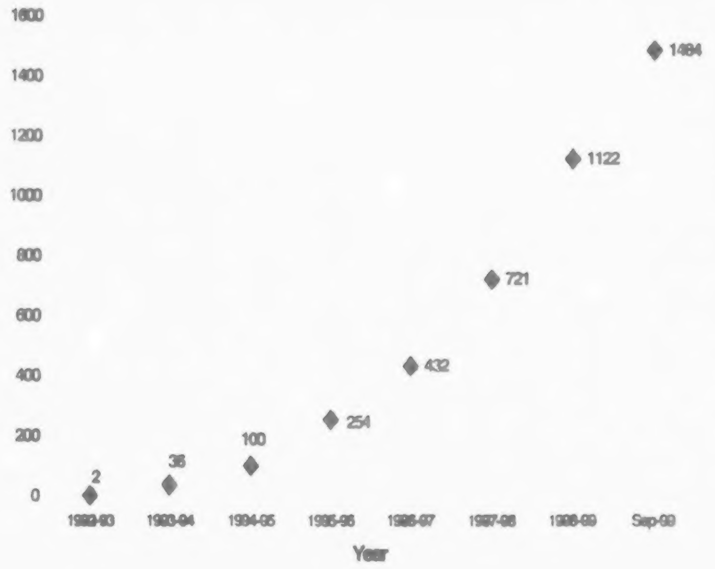
Source: National Endowment for the Arts, *1997 Survey of Public Participation in the Arts*, 1998.

More charter schools are being created

Charter schools are independent public schools that parents can choose as an alternative to the local neighborhood school. In return for a fee per student and freedom from many district regulatory requirements, charter schools commit to educate children in accordance with the goals defined in their charter. If they fail to deliver or attract students, they are closed.

Charter schools must practice open admission policies, meet health and safety standards, comply with civil rights laws and meet the student performance goals set forth in their charter. But the schools are not bound to state education codes in curriculum, personnel, scheduling or financial administration.

Groups of teachers, social service agencies, community development corporations, community organizations, universities, community activists, educational foundations, and a number of museums have participated in the establishment of charter schools.



Source: U.S. Department of Education, *The State of Charter Schools 2000.*

Number of Charter Schools in Operation, 1992 to September, 1999

Museums are going online

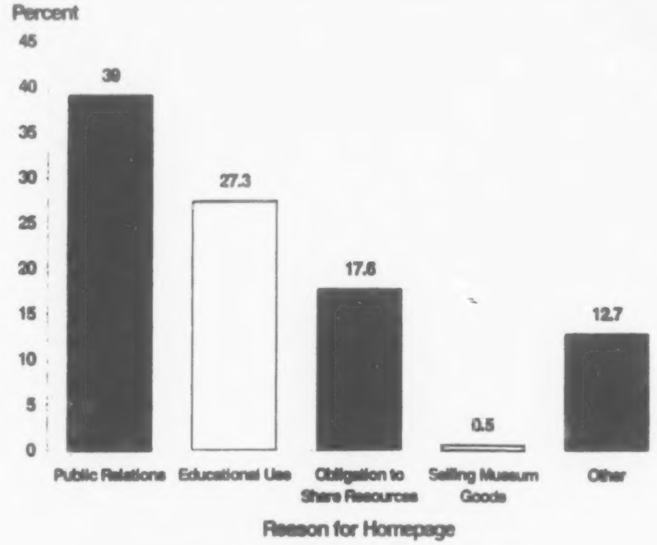
Only a small percentage of the world's museums are online with their own web site. But the number of museums going online and the volume of content available through museum web sites is growing at a remarkable rate. Promotional material, exhibition content, and educational resources are proliferating on museum home pages.

While the supply of museum content online is increasing, so is the demand. The average yearly increase in visitors to the Virtual Library museums' pages between 1994 and 1998 was 144 percent. The Virtual Library is a directory of online museums and museum-related resources.

Museums are also becoming more involved in providing structured learning activities. Technology is important for this as well.

Over 27 percent of online museums report that educational use is the most important reason for their web site.

Primary Importance of Homepage to Museum



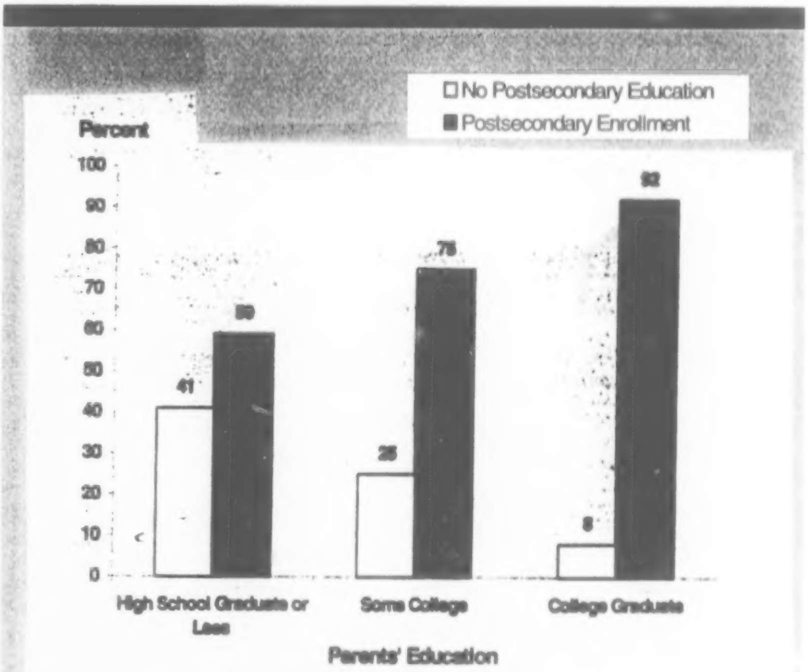
Source: Archives and Museum Informatics, *Time for Renovations: A Survey of Museum Web Sites*, 1999.

High school graduates whose parents attended college are also likely to attend

There is a strong, long-term upward trend in postsecondary enrollments. Over two-thirds of all high school graduates enroll in some sort of postsecondary education within two years after graduation. In 1980, less than 50 percent of high school graduates went on to college within two years.

Many people who might benefit from postsecondary study do not enroll. Whether or not an individual's parents finished high school or attended college correlates strongly with a young person's post-high school education decisions. Only 8 percent of high school graduates where at least one parent was a college graduate did not enroll in any type of postsecondary education. Among students where neither parent attended college, 41 percent elected not to pursue any type of postsecondary education.

Expanding access to education for all ages has intergenerational effects. Looking ahead, an increasing percentage of high school graduates between 2000 and 2010 are likely to come from low-income families where parents have relatively low levels of educational attainment. The challenge for schools and colleges will be to find ways to persuade first-generation college students of the importance of continuing their education after high school.



Source: National Center for Education Statistics, National Educational Longitudinal Study: 1988-94.

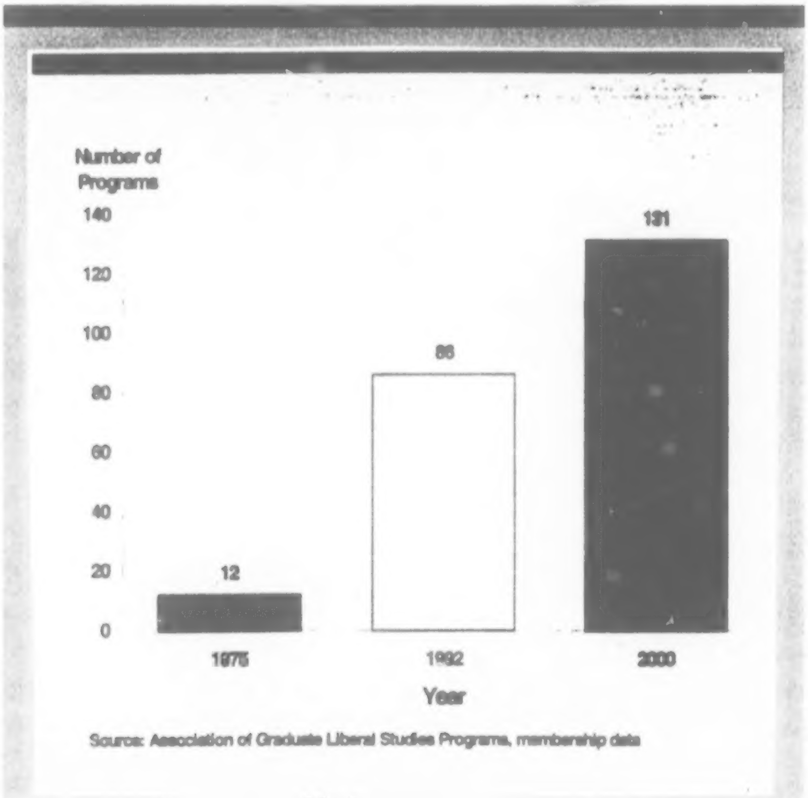
Percent Distribution of 1992 High School Graduates Enrolled in Postsecondary Education by Educational Attainment of Parents, 1994

Advanced liberal arts programs are popular

The study of liberal arts has been at the center of educational curricula since the advent of colleges and universities. Many professionals find advanced liberal studies contribute to success on the job, regardless of their field. Other adults choose to pursue a degree in advanced liberal arts solely for their own personal enrichment.

A Master of Liberal Studies (MLS) degree offers a student the opportunity to pursue graduate-level studies leading to a multidisciplinary master's degree in the liberal arts. Such programs typically consist of a core curriculum, course electives, and a graduate thesis or major research project. Students complete between 30 and 36 credit hours at the graduate level. Part-time MLS students can complete their degree within a three-to five-year period.

Growth in Master of Liberal Studies Programs: 1975 to 1997



Source: Association of Graduate Liberal Studies Programs, membership data

Glossary

Academic Year

The yearly period used by colleges and universities to measure a full-year of academic study, typically commencing in early autumn and ending in late summer.

Associate Degree

A degree awarded upon the successful completion of a pre-baccalaureate level program, usually consisting of two years of full-time study at the college level.

Audioconference

Electronic meeting in which participants in different locations using telephones or speakerphones are linked together by audiobridge and communicate interactively in real-time.

Baby Boomers

The generation born between 1945 and 1964. This group is important because of its large size. Birth rates were very low during World War II and rose sharply after it ended.

Baccalaureate

Degree conferred upon completion of a four-year course of study at the undergraduate level.

Bachelor's Degree

A degree awarded upon the successful completion of a baccalaureate-level program, consisting of four years of full-time study at the college level.

Bandwidth

The width of frequencies required to transmit a communications signal without undue distortion. The more information a signal contains, the more bandwidth it will need to be transmitted. Video, animation, and sound require many times more bandwidth than e-mail.

Glossary

Broadband

A very high bandwidth telecommunication network capable of transmitting complex analog signals or large amounts of digital data, such as real-time audio and video. Broadcast television is an example of a wireless broadband analog network. The national high speed university network, Internet 2, is an example of a wired broadband digital network carrying radio, television and voice communication in addition to data.

Browser

A software package that interprets HTML or XML computer language code to produce World Wide Web graphics, animation, and sound on a computer. Browsers such as Netscape ® and Internet Explorer ® are used both for World Wide Web content and for university or corporate Intranet content.

Cable

Optical fiber, coaxial, or twisted pair (telephone) cable still connects most land-based communications components together. "Wireless," or microwave transmission, is increasingly common in ground-based as well as satellite communications.

CD-ROM

Acronym for compact disc read-only memory, an optical storage medium for computers that allows large amounts of data, text, and images to be stored and read from a thin plastic disk.

Certificate

An educational credential awarded upon completion of a structured curriculum, typically including several courses but lasting for a period less than that required for a degree. Credit awarded upon the completion of a certificate program is generally applicable to degree credit

CLEP

Acronym for College-Level Examination Program, administered by The College Board, that tests students' general knowledge and subject mastery in order to award college-level credit for non-collegiate learning.

Closed-circuit Television

A system using coaxial cable, microwave transmissions, or telephone lines to allow audio and visual interaction within a small network of connected sites located within a small geographic area.

College

A postsecondary-level institution that offers programs of study leading to an associate, baccalaureate, master's, or professional degree. Colleges may be either two- or four-year institutions.

Compressed Video

Process by which video images are captured and transmitted/stored more efficiently and at lower cost than traditional broadcast video, with the result that the video information can be sent via phone lines or stored on a compact disc.

Computer Conference

Computer-facilitated communication among members of a group, where all messages are seen by all participants.

Continuing Education Unit (CEU)

The CEU is a nationally recognized system to provide a standardized measure for accumulating, transferring and recognizing participation in continuing education programs. One CEU is defined as 10 contact hours of participation in an organized continuing education experience under responsible sponsorship, capable direction, and qualified instruction.

Continuing Higher Education

Programs or courses offered by colleges and universities at the pre- or post-baccalaureate levels to students with at least a high school diploma or its equivalent who are usually attending on a less-than-full-time basis. Study can be for credit or noncredit, degree or non-degree, certificate or some other generally recognized educational credential.

Correspondence Study

Individual or self-guided study by mail from a college or university by which credit is typically granted through written assignments and proctored examinations.

Glossary

Credit

A unit of value assigned by colleges or universities upon the successful completion of courses. Credits measure the academic quality of a course in relation to a program of study and measure the progress toward a specified degree program.

Digital Radio/Television Broadcast

Radio and/or television programming that has been digitized for transmission over the Internet. Frequently used by universities with access to the high speed Internet 2 network for delivering instruction or public service programming. Digitization enables multiple programs to be delivered simultaneously, and makes university radio and television programming available worldwide.

Digital Versatile Discs (DVDs)

DVDs are a type of compact disc with greatly increased optical storage capacity over CDs. Like CDs, they come in both ROM and writeable formats.

Distance Education

A term describing the delivery of educational programs to off-site students using one or more technologies such as cable television, video/audio tapes, fax, computer modem, mail, and/or other methods of delivery.

Doctoral Degree

The highest degree awarded upon the demonstrated mastery of a subject, including the ability to perform scholarly research. Generally, a master's degree serves as a prerequisite to obtaining a doctorate.

Downlink

An antenna that receives signals from a satellite. Different models are designed for digital Internet traffic, or analog television signals.

Educational Attainment

The highest level of education obtained, or the highest level of school attended.

Electronic mail

More often called e-mail, this term refers to text messages and documents sent over telephone lines, cable or satellite, to a receiving computer.

Elementary and Secondary Schools

Schools below the postsecondary level that are a part of state or local school systems, nonprofit private schools, and religiously-affiliated schools offering programs from the kindergarten to senior high school level.

Enrollment

Total number of students officially participating in a given program or institution at a particular time.

Experiential Learning

Portfolio of skills and life experiences that may be converted to academic credit by colleges and universities, either by examination or evaluation.

Fiber Optics

Hair-thin, flexible glass filaments that use light signals to transmit audio, video and data signals. Signals can be sent in either analog or digital format. Fiber optic cable has a much higher capacity than traditional copper or coaxial cable and is not as subject to interference and noise.

First-Professional Degree

A degree awarded upon the successful completion of program of study for which a bachelor's degree is normally the prerequisite, and which prepares a student for a specific profession.

Fiscal Year

The yearly accounting period for the federal government, commencing on October 1 and ending September 30.

Glossary

GED

Acronym for the General Educational Development program, or academic instruction to prepare an individual to obtain a high school equivalency diploma.

Full-Time Enrollment

Number of students enrolled in a higher education institution whose total credit-load usually equals at least 75 percent of the normal full-time load specified by the institution.

Graduate

An individual who has successfully completed a specified educational program.

Higher Education

Study beyond the secondary level at institutions offering degree programs.

Higher Education Institution

An institution legally authorized to offer credit programs and degrees at the two- or four-year level. A college may be an institution at the two- or four-year level. A university is a four-year institution offering degree programs at the baccalaureate level and higher.

Hypertext Markup Language (HTML)

The code in which World Wide Web pages and interactive CDs are written. Web browsers use HTML or its newer cousin XML to display graphics, text and animation.

Hyperlinks (or Hotlinks)

URLs or e-mail addresses with built-in programming that take you to the site when the address is clicked. Hyperlinks usually appear as underlined text in web pages, but many also consist of icons or image maps.

The Internet

The Internet, now divided into Internet 1 and Internet 2, is the global network of all online computer networks. Internet 1 is a low speed network used by individuals, businesses, colleges and universities worldwide, and by most libraries and schools in the United States. It requires a computer or other Internet-capable device, and a modem or local area network connection. Distance learning services such as e-mail con-ferencing and web-based courses are typically delivered over Internet 1. Internet 2 is a high-speed data network used by research universities and the U.S. government.

Intranet

A Web-based local area network (LAN) linking computers at a college, university or corporation, and typically enabling users to share Web content and e-mail.

Labor Force

Individuals 16 years of age and older who are employed as civilians or who are actively looking for employment.

"Listserv" (Internet mailing list)

Internet mailing lists, or listervs, are an important forum for academic and research discussion in the United States and much of the rest of the world. They enable all the participants in an e-mail discussion to simultaneously view each other's messages. Listservs are usually restricted to faculty and students at a particular institution or corporation, to members of a club, or to individuals who share a special interest. Public listservs are known as "newsgroups."

Local Area Network (LAN)

A private computer network, usually limited to a building or group of buildings, such as a university or corporate network. It may contain Web-type content and be referred to as an "Intranet".

Master's Degree

A degree awarded upon the successful completion of a program of study beyond the baccalaureate level, typically requiring one or two years of full-time study.

Modem

A device that converts digital computer signal into analog format for transmission over telephone voice lines. Most home users need modems for Internet access to e-mail and online services. Schools and colleges commonly use much faster leased data lines known as T1, T2, and T3 lines — in order of speed— or Internet 2 connections.

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Part-time Enrollment

The number of students enrolled in higher education courses whose total credit-load is less than 75 percent of the full-time load as specified by the institution.

Portal

A web site designed to serve as a gateway to a field of knowledge or to a group of related services. Portals may be general in nature or limited to specific fields of interest.

Post-Baccalaureate Enrollment

The number of graduate-level and first-professional students enrolled in higher education courses leading to advanced degrees.

Postsecondary Education

Courses or programs of study offered to students who have completed high school degrees or the equivalent. These include programs of an academic, vocational or continuing education nature.

Search Engines

Specialized computer programs that search the web for information on any topic specified by an individual user. Search engines may be separate services or components of a larger portal site.

Teleconferencing

A general term for any conferencing system using telecommunications links to connect remote sites. There are many types of teleconferencing including videoconferencing, computer conferencing, and audio conferencing.

Telecourse

A course in which students participate outside the classroom, by viewing and listerning to lectures distributed via broadcast or cable television, and by studying accompanying print materials.

Unclassified Students

Students who are not candidates for degrees or other recognized educational credentials but who are taking courses at higher education institutions for credit.

Undergraduate Students

Students matriculated at a higher education institution who are working toward a baccalaureate or associate degree.

University

A four-year institution of higher education offering degrees at the baccalaureate, master's, doctoral or first-professional levels.

Uplink

A satellite dish that transmits signals up to a satellite.

Universal Resource Locator (URL)

The registered address of a World Wide Web home page or site, generally written "http://www..." followed by the name of the website and a suffix such as ".edu" for colleges and universities. The URL of a website enables a specialized global network of computers to identify it among the millions of other resources on the Internet.

Videoconference

Typically, one-way video and two-way audio transmission conducted via satellite; that is, audience members can see and hear the instructor, who can hear but not see them. Two-way video, which requires camera equipment at both sites, allows the instructor to also see the audience.

Wireless

Another name for microwave or infrared links between communications devices such as cellular phones, and, increasingly, computer systems. Wireless networks promise to make higher education accessible to people living in remote areas , and as well as to those on the move

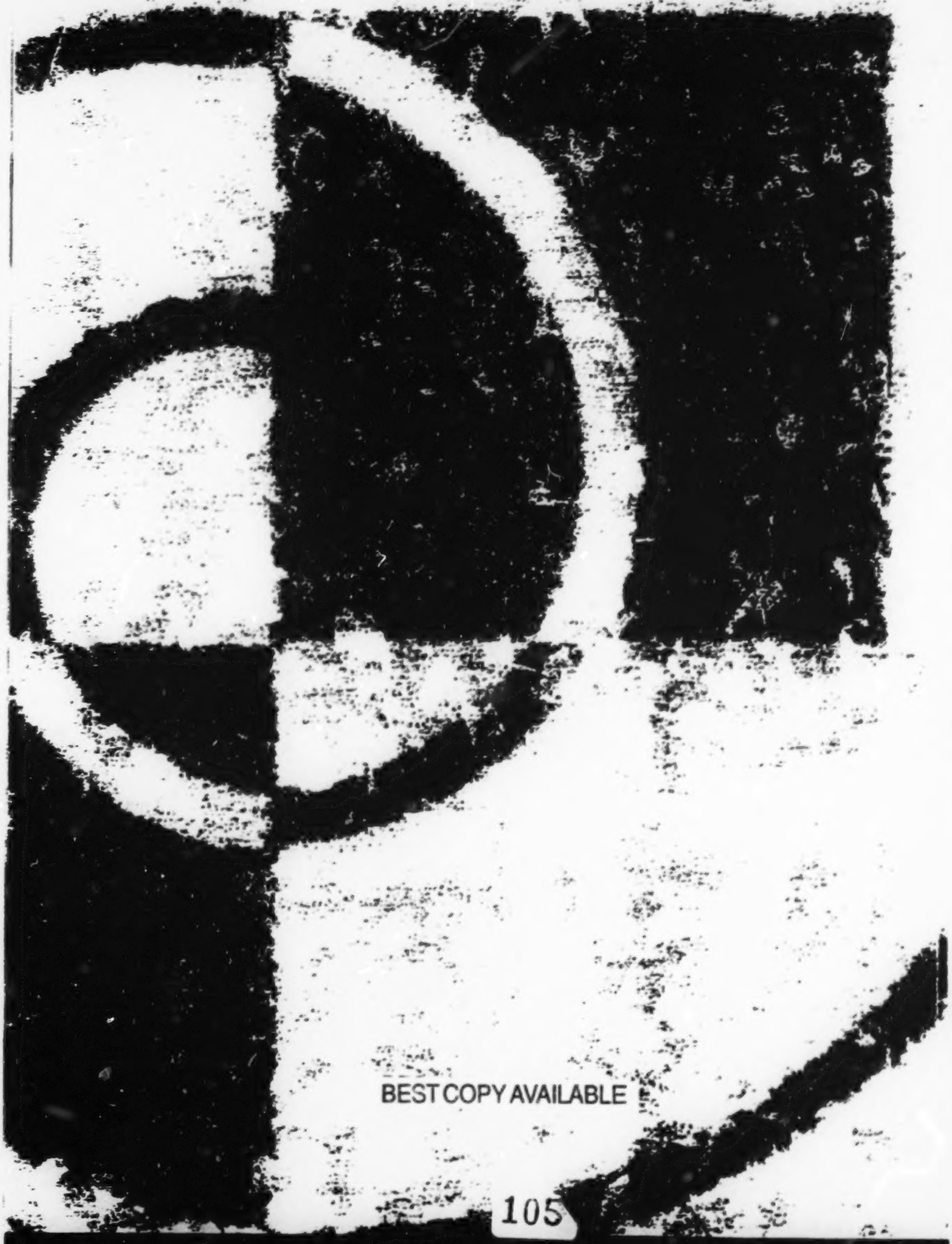
Glossary

World Wide Web

The multimedia standard for the Internet that enables video, sound, and graphics to be to be viewed by a user. Most colleges and universities maintain "home pages" on the Web as a source of information for potential students and the public.

Workforce

Typically defined as those individuals aged 16 years and older employed full-time, full-year in the civilian labor force.



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